The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

Vol. 137, No. 2 — CHICAGO, ILLINOIS — May 8, 1948

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NUTRITIONAL REQUIREMENTS DURING PREGNANCY AND LACTATION

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The normal physiologic processes of the body are greatly altered during pregnancy and lactation, and additional demands are imposed on the maternal organism during each period. Digestion and absorption from the intestinal tract are frequently impaired, especially during the early months of pregnancy, and nutritional requirements are considerably elevated during the latter half of pregnancy and during lactation. It is not strange, therefore, that evidences of nutritional deficiencies are more likely to appear at these times, and it is obvious that the diets of pregnant and lactating women deserve special consideration. Since considerable evidence has accumulated in recent years which indicates that faulty nutrition during pregnancy may affect the pregnant woman or her fetus in ways not usually considered to be signs of malnutrition, some of the studies from which this evidence has come will be reviewed. They provide a background for understanding the special requirements of this period and the bases for the nutritional allowances usually recommended. They also indicate the importance of including evaluation of nutritional status and dietary advice as a routine part of prenatal care.

Since the purpose of this article is to summarize our present understanding of nutrition as it relates to pregnancy and lactation, no attempt will be made to review the literature completely. Garry and Stiven [1] have reviewed the earlier literature from the standpoints of human research and animal experimentation; Garry and Wood [2] have discussed developments in the human field during the last ten years; Burke [3] has emphasized the major developments especially in human research, and Warkany [4] has summarized the manifestations of prenatal nutritional deficiency demonstrated by animal experimentation.

This paper, prepared at the request of the Council of Foods and Nutrition, is one of a series which will appear in THE JOURNAL. The entire series will appear later in book form as the Council's Handbook of Nutrition.

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1. Garry, R. C., and Stiven, D.: A Review of Recent Work on Dietary Requirements in Pregnancy and Lactation, with an Attempt to Assess Human Requirements, Nutrition Abstr. & Rev. 5: 853-887 (April) 1936.

2. Garry, R. C., and Wood, H. O.: Dietary Requirements in Human Pregnancy and Lactation: A Review of Recent Work, Nutrition Abstr. & Rev. 15: 591-621 (April) 1946.

3. Burke, B. S.: Nutrition During Pregnancy: A Review, J. Am. Dietet. A. 20: 735-741 (Dec.) 1944.

4. Warkany, J.: Manifestations of Prenatal Nutritional Deficiency, in Harris, R. S., and Thimann, K. V.: Vitamins and Hormones: Advances in Research and Applications, New York, Academic Press, Inc., 1945, vol. 3, pp. 73-103.

RECENT HUMAN STUDIES INDICATING THAT NUTRITION IS AN IMPORTANT FACTOR IN PREGNANCY

A number of antepartum studies on relatively large numbers of women, which have included careful evaluations of their diets during pregnancy or have provided supplements to their customary diets, have demonstrated a surprisingly strong relationship between the character of the maternal diet on the one hand and the course or outcome of pregnancy and the development of the fetus on the other. The earliest report of this type to attract attention was based on a study in Toronto, Canada, by Ebbs, Tisdall and Scott.[5] Three groups of women were studied during the last half of pregnancy. The diets of the women in one group were supplemented to an excellent nutritional level; another group of women was taught an excellent diet for pregnancy, while the third group remained on poor diets and so served as controls. The incidences of abortions, premature births, stillbirths and neonatal deaths were significantly higher in the group on a poor diet. Not only did the women in the groups with supplemented and good diets have healthier babies, but they themselves proved to be better obstetric risks; they suffered fewer complications, including less toxemia, and they had fewer difficulties during labor, delivery and the postpartum period. The ability of the mother to nurse her infant also appeared to be influenced by the quality of her diet during pregnancy.[6]

A committee of the People's League of Health of England investigated the influence of nutrition of expectant and nursing mothers on maternal and infant morbidity and mortality. Supplementary minerals and vitamins were given to 50 per cent of about 5,000 English women, the remainder serving as controls. The reports of this committee [7] indicate that the incidence of toxemia was 30 per cent lower in the group on a supplemented diet than in the control group. The committee claimed that "a diagnosis of toxaemia cannot be based upon hypertension by itself, as this frequently connotes . . . an essential hypertension," and that the diagnosis of toxemia on the basis of albuminuria, edema, etc., with or without hypertension, but generally with hypertension, has "the advantage of segregating for special study those cases in which the diagnosis of toxaemia rests on a reasonably secure foundation." On this basis the primiparas who received the supplements were found to be protected against toxemia to a sig-

5. Ebbs, J. H.; Tisdall, F. F., and Scott, W. A.: The Influence of Prenatal Diet on the Mother and Child, J. Nutrition 22: 515-526 (Nov.) 1941; Milbank Mem. Fund Quart. 20: 35-46 (Jan.) 1942.

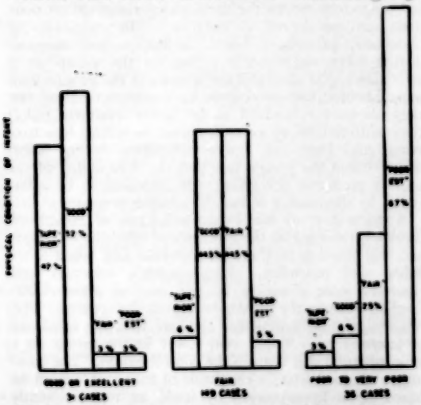
6. Ebbs, J. H., and Kelly, H.: The Relation of Maternal Diet to Breast Feeding, Arch. Dis. Childhood 17: 212-216 (Dec.) 1942.

7. Nutrition of Expectant and Nursing Mothers, Interim Report of the People's League of Health, Lancet 2: 10-12 (July 4) 1942. The Nutrition of Expectant and Nursing Mothers in Relation to Maternal and Infant Mortality and Morbidity, The People's League of Health, J. Obst. & Gynaec. Brit. Emp. 53: 498-509 (Dec.) 1946.

nificant degree, but the results were favorable in the multiparas to a lesser degree. The incidence of prematurity on the basis of weeks of pregnancy was decidedly reduced in the supplemented diet group. The committee emphasized the importance of this finding, since in England about 50 per cent of the infant deaths under 1 month of age are due to prematurity.

Another study carried out by the National Birthday Trust Fund and reported by Balfour [8] included nearly 20,000 women chosen from the lowest income groups in England and Wales. One group of women was fed a yeast supplement, while another group was furnished supplements of vitamins A and D as well as calcium, phosphorus and iron. All the groups received additional milk, so that the chief dietary differences between the groups were in the concentrates fed. Differences in age, parity and social and economic conditions were in favor of the control group. Hence, it can be fairly assumed that any favorable results in the experimental group were due to improvements in diet. Statistically significant reductions in the stillbirth and neonatal mortality rates were observed, particularly in the group fed the vitamin B supplement. The maternal deaths were extremely few despite the large number of cases. There was a slight but not significant reduction in the incidence of toxemia in the supplemented diet groups.

Burke, Beal, Kirkwood and Stuart [9] studied a group



Relationship of prenatal nutrition to the physical condition of the infant at birth and within first two weeks of life (from Burke, Beal, Kirkwood and Stuart [9c])

of women drawn from the prenatal clinics of the Boston Lying-in Hospital. Detailed nutrition histories were obtained at intervals during pregnancy. An over-all relationship was found to exist between a good or excellent diet during pregnancy and good physical condition of the infant at birth. This relationship is shown in the chart.

In the 216 cases studied, all the stillborn infants, all except 1 of the infants who died in the neonatal period, all except 1 of the premature infants, most of the infants with major congenital defects and all the infants considered to be "functionally immature" were born to women in the poorest diet group. In contrast, 94 per cent of the infants born to mothers on good or excellent diets during pregnancy were in good or excellent physical condition at birth. A significant relationship was found to exist between the antepartum diet and the course of pregnancy, although this relationship was less pronounced than that with the condition of the infant at birth. The relationship between the general dietary rating during pregnancy and the incidence of toxemia was also significant. No statistically significant relationship for primiparous women was found between the antepartum diet and the length of labor. However, there were many more difficult types of delivery in the poorest diet group, despite the fact that these infants at birth averaged almost 3 pounds (1,363 Gm.) lighter in weight and several centimeters shorter in length than the infants of mothers whose diets were good or excellent.

Cameron and Graham,[10] working at the Glasgow Royal Maternity and Women's Hospital, studied the food intakes of mothers of stillborn infants, mothers of prematurely born infants and an equal number of mothers of normal full term infants. The average dietary intakes of the mothers with full term infants were superior in all respects; the superiority was greatest in protein, calcium and phosphorus. Apparently the vitamin content of these diets was not evaluated. These workers tested the validity of their observations in a practical way. Several hundred women attending the prenatal clinics of the hospital had their diets carefully supervised during the late months of pregnancy and an equal number whose diets were unsupervised served as controls. The average age and parity of the two groups were not significantly different. The incidences of stillbirths and premature births were significantly higher in the groups with unsupervised diets. Although there were more neonatal deaths in the control group, the difference in this respect was not significant.

Under the severe restrictions imposed by war, England appears to have profited considerably with respect to health as a result of her need to utilize all available food as efficiently as possible. Although the diet has been extremely monotonous, the average nutritional quality of the English diet has improved. This has been especially true for the poorer classes to whom are born the major proportion of the infant population. Previous to the war the diet of the pregnant woman in the lower income brackets in England [11] was poorer than that of the average adult, but during the war special attention was focused on her diet. For the first time in the history of England special food was made available to all pregnant women in the form of additional milk, eggs, supplementary vitamins and other extra rations when possible. The Ministry of Health and the Ministry of Food instituted widespread propaganda programs for the use of these extra rations. A study of the stillbirth rates in England and Wales [12] from

8. Balfour, M. I.: Supplementary Feeding in Pregnancy, Lancet 1: 208-211 (Feb. 12) 1944.

9. (a) Burke, B. S.; Beal, V. A.; Kirkwood, S. B., and Stuart, H. C.: Nutrition Studies During Pregnancy: I. Problem, Methods of Study and Group Studied; II. Relation of Prenatal Nutrition to Condition of Infant at Birth and During First Two Weeks of Life; III. Relation of Prenatal Nutrition to Pregnancy, Labor, Delivery and the Postpartum Period, Am. J. Obst. & Gynec. 46: 38-52 (July) 1943; (b) The Influence of Nutrition During Pregnancy upon the Condition of the Infant at Birth, J. Nutrition 26: 569-583 (Dec.) 1943. (c) Burke, B. S.; Harding, V. V., and Stuart, H. C.: Nutrition Studies During Pregnancy: IV. Relation of Protein Content of Mother's Diet During Pregnancy to Birth Length, Birth Weight and Condition of Infant at Birth, J. Pediat. 23: 506-515 (Nov.) 1943.

10. Cameron, C. S., and Graham, S.: Antenatal Diet and Its Influence on Stillbirths and Prematurity, Glasgow M. J. 24: 1-7 (July) 1944.

11. McLance, R. A.; Widdowson, E. M., and Verdon-Roe, C. M.: A Study of English Diets by the Individual Method: III. Pregnant Women at Different Economic Levels, J. Hyg. 38: 596-622 (Sept.) 1938.

12. Sutherland, I.: The Stillbirth-Rate in England and Wales in Relation to Social Influences, Lancet 2: 953-956 (Dec. 20) 1946.

1928 through 1944 showed that a sharp drop occurred in all counties after this rationing program was instituted. In the poorest economic districts the drop has been highest; in Wales, for example, it amounted to approximately 35 per cent. The neonatal death rate has apparently declined similarly but to a less degree. These changes occurred at a time when all conditions of life other than nutrition had deteriorated.

Baird [13] in Scotland has shown that among the women in the lower socioeconomic groups the incidence of prematurity was twice, the stillbirth rate three times, and the neonatal mortality rate four times the comparable rates found in the women of the upper economic groups. Baird discussed the fact that the stillbirth and neonatal death rates appear to be controlled by social conditions which operate through the mother. He emphasized the fact that in England, Wales and Scotland the stillbirth rate has fallen during the war period and that all age groups and parities have been affected uniformly. He referred to the apparent operation of some factor on a national scale and he considered it probable that improvement in the diets of the poorer women is the explanation.

Severe famine conditions due to war, such as those which existed in Holland for a number of months during the winter of 1944 and spring of 1945 and in Leningrad during the siege of that city, have contributed also to knowledge of the effect of impaired nutrition during pregnancy on mother and fetus. Smith,[14] working in Holland, found that about 50 per cent of the women suffered from amenorrhea and were presumably infertile during the hunger months and that this disappeared promptly with the return of food. The birth rate fell sufficiently to reduce the number of births nine months later to about one third of the usual number. The birth weights of infants born at full term decreased abruptly during the hunger months, and rose almost as abruptly as Holland emerged from this severe starvation period. A significant decline in birth length was also noted, but was less pronounced than the change in weight. Other effects presented by Smith were given with caution as to their statistical reliability because of Holland's abnormal conditions. The available data in regard to abortions were considered useless. There appeared to be only a slight increase in premature births, while the frequency of stillbirths and neonatal deaths in hospitals was not increased. A slight but not significant increase in congenital malformations did occur. The sharp fall in the conception rate associated with amenorrhea may have so altered the situation as Antonov [15] suggested, as to have allowed only those women to become pregnant whose nutritional state was better than most or who for one reason or another received additional food. As a result of studies carried out in Leningrad, Antonov found that in the first half of the period of the siege the stillbirth rate rose to 5.6 per cent or twice the normal figure, the rate of premature births rose to the unusually high figure of 41.2 per cent and the neonatal death rate to 21.2 per cent. The total number of births in this period in the Leningrad State Pediatric Institute was 414. Within the next six month period the prevalence of amenorrhea was widespread, and, owing to a further sharp drop in the birth rate in Leningrad, only 79 women entered the institute for delivery. Among these the rates for prematurity, stillbirths and neonatal deaths were within normal limits. It was shown that for various reasons the majority of these women had considerably better food than was usual at that time.

Toverud [16] reported a study of approximately 1,000 pregnant women in a special health district of Oslo who, as a part of prenatal care, were given nutritional guidance during pregnancy. Her results indicate clearly a relationship between the maternal diet, the mother's health and course of pregnancy, as well as benefits to the newborn infant. The stillbirth rate in the supervised group for the years 1939 to 1944 averaged 16 per thousand live births compared to 30 per thousand for the city of Oslo, and the neonatal death rate was 11 per thousand compared to 20.

RESULTS OF MATERNAL DIETARY DEFICIENCY DURING PREGNANCY IN EXPERIMENTAL ANIMALS

In the literature dealing with animal experimentation there are many illustrations of fetal damage resulting from maternal dietary deficiency. The recent work of Warkany [17] and his associates in relation to congenital malformations is extremely important. He stated that:

> Genetics, infectious and actinic factors have been proved to be etiologic principles leading to malformations in mammals including man. It has been suspected many times that malnutrition of the embryo can also be an etiologic factor;

Warkany has shown that in the maternal diet of the rat the presence or absence of sufficient riboflavin between the thirteenth and the fifteenth day of gestation is a decisive factor in the normal development of the skeleton of the embryo. Riboflavin is known to be essential for normal growth in that it is essential to cell respiration, and it would appear to be necessary also for normal embryonic differentiation. When the maternal diet of the experimental animal is made deficient in vitamin D, Warkany [18] has shown that malformations of an entirely different type result. More recently these same workers have demonstrated the development of certain congenital defects of the eye together with certain tissue defects in rats when the maternal diet is deficient in vitamin A.[19]

Warkany [20] offered the following explanation of the maternal-fetal relation in which congenital malformations may result:

> The stores of the maternal tissues act as "buffers" which prevent deprivation of the developing embryo as long as possible. In fact, it was assumed until recently that these maternal stores either protect the offspring completely, thus resulting in the delivery of normal young, or that in the case of extreme dietary deficiency the embryos die in utero. Although there is some truth in this "all or none" theory, it is not entirely correct. Between these two there exists a narrow range in which maternal nutritional deficiency may result in arrest of the embryos' development without causing death. In this case congenitally deformed offspring may be the result.

13. Baird, D.: The Influence of Social and Economic Factors on Still births and Neonatal Deaths, J. Obst. & Gynaec. Brit. Emp. 52: 217-234, (June); 339-366 (Aug.) 1945.

14. Smith, C. A.: Effects of Maternal Undernutrition upon the Newborn Infant in Holland (1944-1945), J. Pediat. 30: 229-243 (March) 1947.

15. Antonov, A. N.: Children Born During the Siege of Leningrad in 1942, J. Pediat. 30: 250-259 (March) 1947

16. Toverud, K. U.: Beretning om de Første 6 års arbeid ved Oslo kommunes helsestasjon for mor og barn på Sagene (1939-1944), Oslo, Fabritius and Sønner, 1945, pp. 1-138.

17. Warkany, J.: Congenital Malformations Induced by Maternal Nutritional Deficiency, J. Pediat. 25: 476-490 (Dec.) 1944

18. Warkany, J.: Effect of Maternal Rachitogenic Diet on Skeletal Development of Young Rat, Am. J. Dis. Child. 66: 511-516 (Nov.) 1943.

19. Warkany, J., and Schraffenberger, E.: Congenital Malformations Induced in Rats by Maternal Vitamin A Deficiency: I. Defects of the Eye, Arch. Ophth. 35: 150-169 (Feb.) 1946.

20. Warkany, J., and Schraffenberger, E.: Congenital Malformations Induced in Rats by Maternal Nutritional Deficiency: VI. The Preventive Factor, J. Nutrition 27: 477-484 (June) 1944.

No one thus far has proved a relation between congenital malformations in man and maternal nutritional deficiency.

RECOMMENDED NUTRITIONAL ALLOWANCES FOR PREGNANCY

With such strong evidence that good diet during pregnancy lessens the likelihood of complications and contributes to a safer labor and delivery, there would seem to be ample reason for intensive efforts on the part of obstetricians and general practitioners to improve the diets of all pregnant women coming to them for prenatal care. The added evidence that women who have excellent or good diets during pregnancy are much more likely to have healthy well developed infants, and much less likely to have stillborn or prematurely born infants or infants who die in the neonatal period, increases the incentive to improve maternal dietaries.

The nutritional allowances for pregnancy (fourth through ninth months) as recommended by the Food and Nutrition Board of the National Research Council [21] are given in table 1, as well as the daily allowances recommended for the normal woman (sedentary) and for the lactating woman.

Recommended Daily Nutritional Allowances, Normal Woman, Pregnancy and Lactation
(Food and Nutrition Board, National Research Council [21])

Nutritional Essentials	Normal	Pregnancy (4th Through 9th Mon.)*	Lactation
Calories*	2,100	2,500	3,000
Protein (Gm.)	60	85	100
Calcium (Gm.)	0.8	1.5	2.0
Iron (mg.)	12	15	15
Vitamin A, I. U.†	5,000	6,000	8,000
Ascorbic acid (mg.)	70	100	150
Thiamine (mg.)	1.1	1.8	2.0
Riboflavin (mg.)	1.5	2.5	3.0
Nicotinic acid (mg.)	11	18	20
Vitamin D, I. U.	...	400-800	400-800

* Energy requirements vary with activity, size of the person, etc.
† The requirement for vitamin A may be less if it is provided as vitamin A and may be more if chiefly in the form of carotene.

While many persons consider these allowances to be liberal, it should be remembered that they were designed to serve as guides and that they include a margin of safety over the minimum requirement for each nutrient (i. e., the amount which will just prevent clinical signs and symptoms of deficiency). In advising women in regard to their diets during pregnancy, our aim should be to assure that enough of each nutrient is included in the food actually eaten to provide for the best possible health during pregnancy and in preparation for labor, delivery and the postpartum period, as well as to provide an environment which will permit the optimum growth and development of the fetus. These allowances presuppose that women enter pregnancy in optimum nutritional condition, a supposition which is often far from true. Although the increased requirements up to the fourth month are so small as to be negligible, if the diet has not been good previous to pregnancy it should be improved as soon as pregnancy is recognized. Ideally, women should be taught as a part of their general education that it is important to enter pregnancy in excellent nutritional state. If Warkany's findings in relation to congenital malformations in animals are even in part applicable to man, correcting the diet of the pregnant woman after the first three months would not be effective in preventing congenital malformations if deficient diet is a factor. It is probably true that a woman's long time food habits prior to pregnancy, her diet early in pregnancy and her diet during the latter part of pregnancy all have important, although possibly different, effects on both the mother and fetus. To change a woman's food habits to any extent is a difficult task; she must be motivated to do so, and the woman who is found to have poor food habits in pregnancy has probably had the same habits for a long time; in fact, her food habits often represent long time family dietary patterns.

CALORIES AND WEIGHT GAIN DURING PREGNANCY

The energy requirement is given by the National Research Council as 2,500 calories, an increase of approximately 20 per cent above the normal requirement under sedentary conditions. However, the caloric requirement varies widely with activity. The important consideration is that the diet during pregnancy is a much more special diet than is often appreciated because as pregnancy advances the requirements for protein, minerals and vitamins are increased in some instances approximately 100 per cent (table 1), while at no time is the caloric requirement more than about 20 per cent above the woman's normal energy needs. Because it takes approximately 2,000 calories of carefully selected food to carry these structural and regulatory requirements, the freedom of choice is narrowed considerably during pregnancy in comparison to the normal diet, in which only about 1,200 calories are needed to carry the protein, minerals and vitamins.

The increased energy requirement during pregnancy is due to increased basal metabolic rate from the fourth month to term. According to Root and Root,[22] the basal metabolic rate is elevated 23 per cent at term. The increase has been shown by Carpenter and Murlin [23] to be due largely to fetal tissue, which has a higher specific metabolism per unit of weight than maternal tissue. They found that the basal metabolic rate of the woman just before delivery was equal to the rates of the mother and infant taken separately a few days after delivery. More recent work by Rowe and Boyd [24] and Johnston, Hunscher, Macy and others [25] indicates that it is elevated about 15 to 20 per cent above normal and that its elevation may also be subject to hormonal changes occurring in pregnancy. Sontag, Reynolds and Torbet [26] claimed that some women have an increase in basal rate of 30 per cent or more during gestation while others show an actual decline in rate.

The pregnant woman should be allowed to gain 20 to 25 pounds (9.1 to 11.4 Kg.) above her ideal normal weight for height, age and build. This implies that the underweight woman should be allowed to gain more and the overweight woman should be carefully controlled by restricting calories only while the structural requirements are fully met. Kerr [27] reported an

21. Recommended Dietary Allowances, Food and Nutrition Board, National Research Council, Reprint and Circular Series no. 122, revised 1943, pp. 1-18.

22. Root, H. F., and Root, H. K.: The Basal Metabolism During Pregnancy and the Puerperium, Arch. Int. Med. 32: 411-424 (Sept.) 1923.

23. Carpenter, T. M., and Murlin, J. R.: The Energy Metabolism of Mother and Child Just Before and Just After Birth, Arch. Int. Med. 7: 184-222 (Feb.) 1911.

24. Rowe, A. W., and Boyd, W. C.: The Metabolism in Pregnancy. IX. The Foetal Influence on the Basal Rate, J. Nutrition 6: 551-569 (Nov.) 1932.

25. Johnston, J. A.; Hunscher, H. A.; Hummel, F.; Bates, M. F.; Bonner, P., and Macy, I. G.: The Basal Metabolism in Pregnancy, J. Nutrition 16: 513-524 (May) 1938.

26. Sontag, L. W.; Reynolds, E. L., and Torbet, V.: The Relation of Basal Metabolic Gain During Pregnancy to Nonpregnant Basal Metabolism, Am. J. Obst. & Gynec. 48: 315-320 (Sept.) 1944.

27. Kerr, A., Jr.: Weight Gain in Pregnancy and Its Reaction to Weight of Infants and to Length of Labor, Am. J. Obst. & Gynec. 45: 950-960 (June) 1943.

average gain of 22.9 pounds (10.4 Kg.) in a case study of 500 normal primiparas. He found that increasing weight gains in pregnancy are associated with increasing weights of infants at birth, but that the latter increase has no influence on the duration of labor. Unpublished data by Burke indicate that if an underweight woman gains as much as or more during pregnancy than a normal or overweight woman, she tends to give birth to a smaller infant, her own body showing a net gain at the expense of her fetus. Conversely, if an overweight woman restricts her calories sufficiently, she experiences a net loss in weight herself, but her infant tends to be heavier than average. Here again is evidence that the fetus is parasitic on the mother to a degree, depending on the mother's nutritional condition when she enters pregnancy as well as on the quality and quantity of her diet during pregnancy.

PROTEIN

The protein allowance recommended by the Food and Nutrition Board of the National Research Council for the latter half of pregnancy is 85 Gm. daily or approximately 1.5 Gm. per kilogram of body weight. This represents an increase of 40 to 50 per cent above normal. Whatever the exact requirement may be, there is no doubt that the amount of protein needed for pregnancy is increased considerably over the normal. Nitrogen balance studies by several workers[28] have shown that women store normally relatively large amounts of protein during pregnancy over and above that needed by the fetus and the accessory structures. These metabolism studies indicate that a protein requirement of 845 to 900 Gm. (135 to 145 Gm. of nitrogen) above maintenance is representative of the total net requirement for the fetus and its adnexa during gestation and that under favorable circumstances a woman retains an additional storage of 1,250 to 2,500 Gm. of protein (200 to 400 Gm. of nitrogen). These figures represent an increased requirement of 10 to 20 Gm. of protein daily during the latter months of pregnancy.

A negative nitrogen balance sets in abruptly just before term,[29] and there is a substantial loss of nitrogen from the maternal organism during parturition and the postpartum period. For women who nurse their infants there is an additional loss in the breast milk amounting to 1 to 1.5 Gm. of nitrogen daily, depending on the amount of milk secreted. Thus, it is usual to find a negative nitrogen balance throughout the puerperium and often during the lactation period as well. The storage of nitrogen during pregnancy may, therefore, be regarded in part as a natural mechanism to provide in advance for the large losses occurring during delivery and the puerperium and in part as preparation for the high requirements of lactation.

In addition to the nitrogen balance studies already discussed, the recent studies of Burke and others[6] indicate that less than 75 Gm. of protein daily during the latter part of pregnancy results in an infant who tends to be short, light in weight and likely to receive a low pediatric rating in other respects.

If it is assumed that an allowance of 60 Gm. (approximately 1 Gm. per kilogram of body weight) is desirable for the average nonpregnant woman and that an increase of 15 to 20 Gm. daily is needed in the latter part of pregnancy, the protein allowance of 85 Gm. daily suggested by the Food and Nutrition Board of the National Research Council appears liberal and adequate to care for individual differences. Williams[30] emphasized the important point that this figure presupposes a previously normal protein intake and nutritional state.

The question arises how nearly the diets of pregnant women approximate this allowance. Burke and others[6] in studies at the Boston Lying-in Hospital found that only 10 per cent of the women were consuming 85 Gm. of protein daily, while 68 per cent consumed less than 70 Gm., 38 per cent less than 55 Gm. and 14 per cent less than 45 Gm. of protein daily during this important period of fetal growth and development. Arnell and others[31] found that among pregnant women in New Orleans 18 per cent took less than 42.5 Gm. of protein daily, i. e., less than half the recommended allowance, and 79 per cent took less than 70 Gm. daily. Williams and Fralin[32] in Philadelphia showed that only 13 per cent were taking the recommended daily allowance. It should be emphasized that an amazingly large number of women do not eat a diet well supplied with protein even for their normal needs and do not change their habits appreciably during pregnancy. Careful instruction in regard to the protein foods needed during pregnancy is therefore essential. The pregnant woman needs to be taught the importance of 1 quart of milk (about 1,000 cc.) daily (for its 32 Gm. of protein), at least ¼ pound (113 Gm.) of lean meat or its equivalent (for its 24 Gm. of protein) and an egg or equivalent daily (for another 6 Gm.). These animal foods or their equivalents will furnish approximately 65 Gm. of protein of high biologic value. A potato together with at least four servings of bread and cereal foods and the other necessary foods in a well balanced diet will furnish about 20 to 25 Gm. more protein in the day's diet.

Amenorrhea, noted by Smith in Holland and Antonov in Leningrad as a result of recent war conditions and already mentioned, also has been described by Sydenham[33] among British civilians in Stanley Camp, Hong Kong, China. Sydenham concluded that although emotional shock or change of environment may have explained many of the irregularities of menstruation and cases of amenorrhea of short duration, the 53.7 per cent of women with amenorrhea lasting more than three months—in some cases lasting a year or more—could hardly be explained on this basis. He stated that malnutrition, especially deficiency of protein, appeared to be the most probable cause.

The role of protein in relation to toxemia of pregnancy is still a debated problem. Arnell[31] found a higher incidence of toxemia among patients with a low protein diet than among those with a liberal intake.

28. (*a*) Hunscher, H. A.; Donelson, E.; Nims, B.; Kenyon, F. and Macy, I. G.: Metabolism of Women During the Reproductive Cycle: V. Nitrogen Utilization, J. Biol. Chem. **99**: 507-520 (Jan.) 1933. (*b*) Coons, C. M.; Schiefelbusch, A. T.; Marshall, G. B., and Coons, R. R.: Studies in Metabolism During Pregnancy, Bulletin 223, Oklahoma Agricultural and Mechanical College, Agricultural Experiment Station, March 1935, pp. 1-113. (*c*) Adair, F. L.; Dieckmann, W. J.; Riebel, M.; Dunkle, F.; Kramer, S., and Lorang, E.: Calcium, Phosphorus, Iron and Nitrogen Balances in Pregnant Women, Am. J. Obst. & Gynec. **40**: 116-121 (July) 1940. (*d*) Obcrst, F. W., and Plass, E. D.: Calcium, Phosphorus and Nitrogen Metabolism in Women During the Second Half of Pregnancy and in Early Lactation, ibid. **40**: 399-413 (Sept.) 1940.

29. Macy, I. G., and Hunscher, H. A.: Evaluation of Maternal Nitrogen and Mineral Needs During Embryonic and Infant Development, Am. J. Obst. & Gynec. **37**: 878-888 (June) 1934.

30. Williams, P. F.: Importance of Adequate Nutrition in Pregnancy, J. A. M. A. **127**: 1052-1053 (April 22) 1945.

31. Arnell, R. E.; Goldman, D. W., and Bertucci, F. J.: Protein Deficiencies in Pregnancy, J. A. M. A. **127**: 1101-1107 (April 28) 1945.

32. Williams, P. F., and Fralin, F. G.: Nutrition Study in Pregnancy: Dietary Analyses of Seven-Day Food Intake Records of Five Hundred Fourteen Pregnant Women; Comparison of Actual Food Intakes with Variously Stated Requirements, and Relationship of Food Intake to Various Obstetric Factors, Am. J. Obst. & Gynec., **43**: 1-20 (Jan.) 1942.

33. Sydenham, A.: Amenorrhoea at Stanley Camp, Hong Kong, During Internment, Brit. M. J. **2**: 159 (Aug. 3) 1946.

Holmes [34] reported the incidence in women taking low protein diets to be twice as great as that in similar groups taking high protein diets. Burke and others [35] found a significant relationship between the incidence of preeclampsia and the general antepartum dietary rating. While the protein intake was low in many of these cases, many other dietary essentials were also low, so that it was not possible to conclude that protein was the sole dietary factor involved. We wish to emphasize the difficulty in human studies of proving conclusively that a given nutrient is responsible for a given effect. Strauss [35] has contended that in the presence of protein insufficiency the colloid osmotic pressure of serum protein is altered. This causes edema and a consequent disturbance of the electrolyte balance which, in turn, may result in elevation of the blood pressure and other symptoms of toxemia.

Dieckmann [36] has, however, expressed the view that toxemia and a low protein intake are not related. Moreover, reports from certain areas in which starvation occurred in World War II have indicated that the incidence of toxemia fell sharply among pregnant women during the period of extreme food restriction. Smith [37] gave figures regarding the incidence of toxemia in Holland showing that during the months of acute hunger the incidence fell sharply. He discussed the possible explanations of this sharp contrast in findings.

Although there is still controversy among well informed persons concerning the cause of toxemia, it is generally accepted that a high protein diet does not predispose to the condition. The major weight of evidence would seem to indicate that toxemia occurs more often among chronically malnourished women than among well nourished women and that protein is one of the factors frequently deficient. The subject would appear to be an important one for further investigation.

For a further discussion of the effects of protein deficiency on both mother and fetus, the reader is referred to a paper on the subject by one of us.[38]

CALCIUM, PHOSPHORUS AND VITAMIN D

As a result of balance studies of Macy,[39] Coons [39a] and more recently Dieckmann,[39c] Oberst and Plass [39d] and others, it is an accepted fact that calcium and phosphorus requirements are considerably increased during pregnancy, if the maternal organism's own stores are to be maintained and fetal needs met. While the exact requirement for calcium is not known, these balance studies indicate that 1.5 Gm. of calcium daily during the latter half of pregnancy should allow sufficient calcium to meet the needs of the fetus and also permit an additional storage of calcium in the mother in preparation for lactation. Swanson and Iob [39] have shown that 65 per cent of the calcium and 64 per cent of the phosphorus of a full term fetus are deposited in the last two months of pregnancy.

The phosphorus requirement is somewhat higher than the calcium requirement and is probably in the neighborhood of 2 Gm. in the latter part of pregnancy. There need be little concern about phosphorus, however, since the protein-rich foods are liberally supplied with it and when protein and calcium needs are cared for phosphorus will usually be supplied in ample amounts.

Since vitamin D appears to aid in the utilization and retention of these two minerals, some additional source of this vitamin, a total of 400 to 800 international units, has been recommended daily. Liu and co-workers [40] and others have found that in the presence of an adequate supply of vitamin D the same degree of calcium retention is maintained on a somewhat lower intake of calcium but that in severe vitamin D depletion high levels of calcium and phosphorus will not maintain the subject in balance. The calcium and phosphorus requirements may well be conditioned by such factors as previous calcium and phosphorus stores, dietary custom and state of vitamin D nutrition. The protein and calcium requirements are also related.[41]

From a practical standpoint it should be remembered that the majority of women today enter pregnancy with low calcium stores and with poor food habits in regard to calcium-rich foods, namely, milk and its products. One quart of milk furnishes 1.2 Gm. of calcium, and only approximately 0.3 Gm. can be obtained from other foods in the usual diet. Without this amount of milk, therefore, it is impossible to meet fully the recommended calcium allowance of pregnancy. Milk must also be depended on for much of the phosphorus needed. Calcium tablets should not be recommended as a milk substitute for the pregnant woman, because considerable dependence also must be placed on milk as a source of other required nutrients. It has already been emphasized that the pregnant woman's need for protein is high and that 1 quart of milk daily supplies a little more than one third of that protein. Whole milk also is an important source of riboflavin, thiamine and vitamin A. In addition the number of calcium pills required to furnish the calcium equivalent of 1 quart of milk is so large that it usually will not be taken and will, if taken, often cause constipation.

Maxwell [42] has reported in considerable detail a number of cases of congenital rickets in the newborn of Chinese women suffering from osteomalacia. Dunham [43] and Rector [44] have also shown that fetal rickets or rickets in the early weeks of life may result from lack of calcium, phosphorus or vitamin D in the prenatal period.

Prenatal studies carried out by our associates and us [45] have shown a relationship between both the protein and the calcium content of the antepartum diet and the osseous development of the infant at birth. This was indicated by the presence or absence of certain osseous centers in roentgenograms of the hand, knee and foot. While both relationships are strong, that with protein appears to be somewhat stronger than that

34. Holmes, O. M.: Protein Diet in Pregnancy, West. J. Surg. **49**: 56-60 (Jan.) 1941.

35. Strauss, M. B.: Observations on Etiology of Toxemias of Pregnancy: IV. Primary Role of Plasma Proteins in Conditioning Water Retention and Edema Formation in Normal and "Toxemic" Pregnancy, Am. J. M. Sc. **195**: 723-728 (June) 1938.

36. Dieckmann, W. J.: Edema in Pre-Eclampsia and Eclampsia, Am. J. Obst. & Gynec. **41**: 1-16 (Jan.) 1941.

37. Smith, C. A.: The Effect of Wartime Starvation in Holland upon Pregnancy and Its Product, Am. J. Obst. & Gynec. **53**: 599-608 (April) 1947.

38. Stuart, H. C.: Effects of Protein Deficiency on the Pregnant Woman and Fetus and on the Infant and Child, New England J. Med. **236**: 507, 513 (April 3); 537-541 (April 10) 1947.

39. Swanson, W. W., and Iob, L. V.: The Growth of Fetus and Infant as Related to Mineral Intake During Pregnancy, Am. J. Obst. & Gynec. **38**: 382-391 (Sept.) 1939.

40. Liu, S. H.; Chu, H. I.; Hsu, H. C.; Chao, H. C., and Chen, S. H.: Calcium and Phosphorus Metabolism in Osteomalacia: XI. The Pathogenic Role of Pregnancy and Relative Importance of Calcium and Vitamin D Supply, J. Clin. Investigation **20**: 253-271 (May) 1941.

41. McCance, R. A.; Widdowson, E. M., and Lehmann, H.: Effect of Protein Intake on Absorption of Calcium and Magnesium, Biochem. J. **36**: 686-691 (Sept.) 1942.

42. Maxwell, J. P.: Further Studies in Adult Rickets (Osteomalacia) and Foetal Rickets, Proc. Roy. Soc. Med. **28**: 265-300 (Jan.) 1935.

43. Dunham, E. C.: Rickets in an Infant of Thirty-Four Days, Am. J. Dis. Child. **26**: 155-163 (Aug.) 1923.

44. Rector, J. M.: Prenatal Influence in Rickets. I. Fetal Rickets; II. Early Postnatal Rickets and Florid Rickets with Multiple Fractures, J. Pediat. **21**: 161-177 (Feb.) 1942.

45. Stuart, H. C.: Findings on Examinations of Newborn Infants and Infants During the Neo-Natal Period Which Appear to Have a Relationship to the Diets of Their Mothers During Pregnancy, Federation Proc. **4**: 271-281 (Sept.) 1945.

with calcium. A similar relationship has also been shown by these workers between the amount of calcium in the tooth buds as seen in lateral roentgenograms of the head at birth and the protein content of the maternal diet. A somewhat weaker relationship was also shown with the calcium content of the mother's diet. Toverud [46] reported that roentgenograms of newborn infants show great variations in the calcification of the teeth. He stated that this calcification is determined not only by the age of the fetus but also by the nutritional and general physical condition of the mother. Mellanby and Coumoulos,[47] Toverud and Toverud,[48], Burke,[49] Berk [50] and Massler and others [51] have accumulated data which indicate that the structure of the deciduous teeth is related to the prenatal diet. It would appear that unless the maternal diet allows for a liberal storage of calcium and other substances essential to sound tooth structure in the infant's body at birth, tooth structure may be further impaired in the early months of infancy.

IRON

The iron allowance of 15 mg. recommended for the latter months of pregnancy assumes that the woman enters pregnancy with adequate stores of iron and a normal hemoglobin level. Many women have depleted iron stores and a low hemoglobin level at this time. While balance studies by Coons [52] and Toverud [53] indicate that 15 mg. of iron are sufficient in many cases, Macy and Hunscher [29] considered 20 mg. a safer allowance. In a recent publication Toverud [10] favored 20 mg. of iron during the latter part of pregnancy to assure a positive balance. Various workers have shown that anemia during pregnancy is common both in this country and elsewhere, and it is generally accepted that the hemoglobin level is affected by diet. Garry and Wood [2] rightfully deplored the "lack of detailed information concerning the normal behavior of blood volume, of plasma volume and of the volume of packed red cells during pregnancy." Without such standards red cell counts and hemoglobin values are misleading.

In India a macrocytic hypochromic anemia is common during pregnancy and is a cause of high infant and maternal mortality. Napier and Edwards [54] have reported studies on 529 pregnant women in India. Although there was evidence of widespread secondary anemia, the majority of cases of anemia were also macrocytic in type. This type of anemia was also thought to be of nutritional origin, because of its higher incidence in the lower economic groups. When macrocytic anemia was encountered among the wealthy, a high incidence of vegetarianism resulting in diets of low protein quality and quantity was found. Bethell [55] has also reported this type of anemia, although its incidence in this country is not common. It has been found to yield usually to an increased intake of protein and/or of the vitamin B complex. In India liver therapy is often used. Recently folic acid [56] has been used successfully in treating macrocytic anemia of pregnancy.

One of the major causes of anemia of early infancy may be insufficient iron stores in utero resulting from anemia of the mother during pregnancy.

Iron in the diet comes in relatively small amounts from a number of foods. Food sources of iron include lean meat, liver, egg, potato, fruit (especially dried fruits), vegetables (especially greens and legumes), whole grains or enriched breads and cereals and molasses. If the pregnant woman has hypochromic anemia, medicinal iron should be given routinely in addition to a well balanced diet.

IODINE

In regions where goiter is endemic, iodine should receive especial consideration, since the physiologic changes incident to pregnancy may result in deficiency symptoms in either mother or infant or both.

VITAMINS

Vitamin D has already been discussed in relation to the requirements for calcium and phosphorus. Undoubtedly pregnancy increases the need for all the vitamins, but our actual knowledge in this field is limited, and much investigation is necessary before the requirements for the various vitamins during pregnancy can be stated with any degree of exactitude. Until more definite information is available the Recommended Allowances of the National Research Council seem desirable, although they may be unnecessarily liberal in some instances. It is better to err on the side of liberality in these instances, since there is no indication that a moderate excess is potentially harmful, and considerable harm may result from a deficiency during a period of rapid growth.

Vitamin A.—The vitamin A requirement of pregnancy is not known and the recommended allowance of 6,000 international units represents an arbitrary increase over normal adult requirements. In the average diet about two thirds of the vitamin A value is in the form of carotene; a smaller amount would be needed if all were provided as vitamin A. This amount is readily supplied in the daily diet by whole milk, eggs, butter or fortified oleomargarine and by the inclusion several times each week of a liberal serving of a dark leafy green or deep yellow vegetable. Liver at least once a week improves considerably the vitamin A content of the diet. Since most of the vitamin A is removed when milk is skimmed, it is much better not to substitute skim for whole milk as a means of reducing the caloric value of the diet, but rather to remove less desirable foods when necessary to limit calories. Mineral oil should not be used as a laxative or in salad dressing or other food combinations, especially during pregnancy, since it absorbs both carotene and vitamin A.

46. Toverud, G.: Preventive Dentistry in the Preschool Period and Particularly During Foetal Life, Dent. Mag. & Oral Topics **55**: 299-310 (April) 1938.

47. Mellanby, M., and Coumoulos, H.: The Improved Dentition of Five-Year Old London School Children: A Comparison Between 1943 and 1929, Brit. M. J. **1**: 837-840 (June 24) 1944.

48. Toverud, K. U., and Toverud, G.: Studies on the Mineral Metabolism During Pregnancy and Lactation and Its Special Bearing on the Disposition to Rickets and Dental Caries, Acta Pediat. (supp. 2) **13**: 1-116, 1931.

49. Burke, B. S.: Study of the Nutrition of Groups of Children Selected on the Basis of No Defective Deciduous Teeth and High Incidence of Defective Deciduous Teeth, Child Development **12**: 32-334 (Dec.) 1941.

50. Berk, H.: Some Factors Concerned with the Incidence of Dental Caries in Children: Multiple Pregnancy and Nutrition During Prenatal, Postnatal and Childhood Periods, J. Am. Dent. A. **30**: 1749-1754 (Nov.) 1943.

51. Massler, M.; Schour, I., and Poncher, H. G.: Developmental Pattern of the Child as Reflected in the Calcification Pattern of the Teeth, Am. J. Dis. Child. **60**: 33-67 (July) 1941.

52. Coons, C. M.: Iron Retention by Women During Pregnancy, J. Biol. Chem. **97**: 215-226 (July) 1932.

53. Toverud, K. U.: Investigation on the Ironstore of Newborn Infants, Acta Pediat. (supp. 1) **17**: 136-140, 1935.

54. Napier, L. E., and Neal-Edwards, M. I.: Anaemia in Pregnancy in Calcutta: An Analysis of Haematological and Other Data from Five Hundred and Twenty-Nine Pregnant Women, Indian M. Research Mem., December 1941, no. 33, pp. 1-135.

55. Bethell, F. H.; Blecha, E., and Van Sant, J. G.: Nutritional Inadequacies in Pregnancy Correlated with the Incidence of Anemia, J. Am. Dietet. A. **19**: 165-172 (March) 1943.

56. Spies, T. D.: Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, J. A. M. A. **130**: 474-476 (Feb. 23) 1946.

Byrn and Eastman,[57] Bodansky and associates [58] Lund and Kimble,[59] as well as others, have shown that the plasma vitamin A value falls as pregnancy advances. Lund and Kimble claimed that the time and amount of the decrease depends in part, at least, on the intake of vitamin A. There appears to be an immediate and unfailing postpartum elevation of plasma vitamin A. Lund and Kimble [60] also reported that plasma vitamin A values in the newborn infant are independent of the maternal plasma values regardless of the mother's dietary intake, but that fetal plasma carotene varies regularly with maternal values. Both Byrn and Eastman and Bodansky, Lewis and associates found substantial amounts of vitamin A and some carotene in fetal plasma. Bodansky and associates attributed the decrease in plasma vitamin A in the third trimester of pregnancy to storage in fetal liver and to utilization by fetal tissue. Lewis, Bodansky and others [61] reported that a supplement of 10,000 international units of vitamin A or of carotene during the last few months of pregnancy appears to maintain good levels of vitamin A in maternal plasma but that the vitamin A and carotene levels of the infant's cord blood appear to be no higher than in those infants whose mothers did not receive supplements.

It has already been mentioned that Warkany [10] and others have shown in animals that certain abnormalities of the eyes and tissues are due to vitamin A deficiency during pregnancy. Maxwell [62] cited a case of keratomalacia of both eyes at birth in an infant of a Chinese woman who had been on a diet deficient in vitamin A.

Vitamin B Complex.—The exact requirements for the vitamin B complex during pregnancy are not known, but undoubtedly the need is increased, especially in the latter months of pregnancy.

Thiamine.—Lockhart and others,[63] using the excretion peak in the urine as an indication of the subject's thiamine status, found that approximately three times as much thiamine is required during late pregnancy as under normal conditions. Toverud [16] in a recent publication confirmed this observation and suggested that on this basis the optimum thiamine requirement in late pregnancy is about 3 mg.

Polyneuritis of pregnancy has been recognized by various workers as due to a deficiency of thiamine. McGoogan [64] has reviewed the literature on severe polyneuritis due to vitamin B deficiency in pregnancy. He concluded that pernicious vomiting of pregnancy may result in a vitamin B deficiency with a severe polyneuritic syndrome. One of us has observed that considerable benefit often is derived when thiamine is given to patients with nausea in early pregnancy and that it is helpful in many cases of pernicious vomiting.

Van Gelder and Darby [65] have reviewed the literature on congenital and infantile beriberi. They have also reported a case of congenital beriberi in an infant born to a mother who had been on an inadequate diet for several months and who did not herself exhibit any pronounced clinical symptoms of deficiency.

The amount of thiamine currently recommended for pregnancy is 1.8 mg. daily. Dependence must be placed on milk, lean meat, vegetables, especially legumes and potato, and whole grain or enriched bread and cereals for the major amount of this vitamin, since in the usual diet for pregnancy these foods furnish approximately 80 per cent of the thiamine allowance.

Riboflavin.—The recommended allowance of this vitamin for the latter part of pregnancy is 2.5 mg. daily. Adequate amounts of riboflavin are undoubtedly important in periods of rapid growth and development. Milk furnishes the major portion of riboflavin in the average diet, 1 quart supplying approximately 1.6 mg., or about 65 per cent of the recommended allowance. Liver will furnish 2.5 mg. per 4 ounce portion, and if used once a week or oftener serves as an additional safeguard to the average intake. Dark leafy green vegetables and lean meat are good sources of this vitamin. Whole grain or enriched bread and cereal foods, other vegetables and eggs contribute most of the remaining riboflavin in the average diet.

Braun and others [66] reported manifestations of riboflavin deficiency in 21 per cent of the cases in a series of 900 Jewish women. These women belonged to the poorer economic classes in Palestine. Glossitis and heartburn were symptoms common to all cases; many of the women also showed symptoms of cheilosis, corneal vascularization and angular stomatitis. The symptoms appeared usually in the third trimester of pregnancy, and the amount of riboflavin excreted in the urine was low. The average daily intake of these women was under 1.3 mg. When they were treated either with riboflavin or yeast extract their symptoms improved.

Warkany,[29] as has been stated, has shown a relationship between riboflavin deficiency in the rat and certain skeletal defects.

Nicotinic Acid.—Although 18 mg. of nicotinic acid are recommended for pregnancy, little is known about the human requirement. Lean meat, liver, legumes, potato and whole grain or enriched bread and cereal foods contribute the major portion in the average diet. Milk, while a poor source of nicotinic acid, is a good source of tryptophane, which may function as a precursor of nicotinic acid.[67]

Pyridoxine (Vitamin B_6).—Mention should be made of the use of pyridoxine in the prevention of severe nausea and vomiting of pregnancy.[68] While there seems to be some difference of opinion about the success of its

57. Byrn, J. N., and Eastman, N. J.: Vitamin A Levels in Maternal and Fetal Blood Plasma, Bull. Johns Hopkins Hosp. **73**: 132-137 (Aug.) 1943.

58. Bodansky, O.; Lewis, J. M., and Lillienfeld, M. C. C.: The Concentration of Vitamin A in the Blood Plasma During Pregnancy, J. Clin. Investigation **22**: 643-647 (Sept.) 1943.

59. Lund, C. J., and Kimble, M. S.: Vitamin A During Pregnancy, Labor and the Puerperium, Am. J. Obst. & Gynec. **46**: 486-501 (Oct.) 1943.

60. Lund, C. J., and Kimble, M. S.: Plasma Vitamin A and Carotene of the Newborn Infant with Consideration of Fetal-Maternal Relationships, Am. J. Obst. & Gynec. **46**: 207-221 (Aug.) 1943.

61. Lewis, J. M.; Bodansky, O.; Lillienfeld, M. C. C., and Schneider, H.: Supplements of Vitamin A and of Carotene During Pregnancy: Their Effect on the Levels of Vitamin A and Carotene in the Blood of Mother and of Newborn Infant, Am. J. Dis. Child. **73**: 143-150 (Feb.) 1947.

62. Maxwell, J. P.: Vitamin Deficiency in the Antenatal Period: Its Effects on the Mother and Infant, J. Obst. & Gynaec. Brit. Emp. **39**: 764-776, 1932.

63. Lockhart, H. S.; Kirkwood, S. B., and Harris, R. S.: The Effect of Pregnancy and Puerperium on the Thiamine Status of Women, Am. J. Obst. & Gynec. **46**: 358-363 (Sept.) 1943.

64. McGoogan, L. S.: Severe Polyneuritis Due to Vitamin B Deficiency in Pregnancy, Am. J. Obst. & Gynec. **43**: 752-762 (May) 1942.

65. Van Gelder, D. W., and Darby, F. U.: Congenital and Infantile Beriberi, J. Pediat. **25**: 226-234 (Sept.) 1944.

66. Braun, K.; Bromberg, Y. M., and Brzezinski, A.: Riboflavin Deficiency in Pregnancy, J. Obst. & Gynaec. Brit. Emp. **52**: 1-12 (Feb.) 1945.

67. Krehl, W. A.; Sarma, P. S.; Teply, L. J., and Ehrhjem, C. A.: Factors Affecting the Dietary Niacin and Tryptophane Requirement of the Growing Rat, J. Nutrition **31**: 85-106 (Jan.) 1946.

68. Weigysem, B. B.; Wald, Z.; Mitchell, G. J., and Susendal, G. F.: Oral Administration of Pyridoxine Hydrochloride in the Treatment of Nausea and Vomiting of Pregnancy, Am. J. Obst. & Gynec. **47**: 389-394 (March) 1944. Hart, B. F.; McConnell, W. T., and Pickett, A. N.: Vitamin and Endocrine Therapy in Nausea and Vomiting of Pregnancy, Am. J. Obst. & Gynec. **48**: 251-252 (Aug.) 1944.

use in this respect, the workers referred to consider it helpful.

Ascorbic Acid.—The ascorbic acid requirement has been shown to be increased considerably during the latter part of pregnancy. The findings of Lund and Kimble [69] substantiate those of Teel and others [70] in respect to the fetal-maternal relationship of this vitamin. Both groups found that the plasma level in the cord blood of the infant is always higher than that of the maternal blood, and when the latter is low the difference between the two becomes proportionately greater. Maternal plasma levels of ascorbic acid were found to reflect the current dietary level, and it was also found that an increasing intake of ascorbic acid was necessary during the latter part of pregnancy to maintain the same plasma level. While none of the published studies include any cases in which the maternal plasma value was zero, it seems reasonable to suppose that in such a case the fetus would suffer and that fetal scurvy could result if the condition persisted. Fetal scurvy [71] has been reported in the literature.

The recommended allowance of 100 mg. of ascorbic acid daily is supplied by 8 ounces (227 Gm.) of unstrained orange juice, or by proper amounts of other foods rich in this vitamin, such as tomatoes, grapefruit, raw cabbage, raw or properly cooked leafy green vegetables or potatoes cooked in the skin.

Vitamin E (Alpha Tocopherol).—Vitamin E is of interest in its possible relation to habitual abortion. This vitamin has never been proved to be essential to man and the possibility of deficiency in the average human diet is considered remote. Shute [72] has discussed this problem thoroughly.

Vitamin K.—Since vitamin K is present in certain foods and is also synthesized by bacterial action in the intestinal tract, the possibility of a deficiency in the mother seems unlikely under normal conditions. However, the newborn infant has a very low store of vitamin K, and hemorrhagic disease of the newborn is associated with this deficiency. The administration of vitamin K to the mother in the last weeks of pregnancy, or just prior to or during labor, increases the prothrombin time of the infant and apparently reduces the incidence of evidences of this deficiency.[73] It is still a matter of controversy as to whether or not the administration of vitamin K in this manner has materially reduced the incidence of intracranial hemorrhage at birth.[74] However, as Warner stated [75]:

It is logical to assume that the prophylactic administration of vitamin K would decrease the incidence and extent of intracranal hemorrhage at the time of birth in these infants. Also, the administration of vitamin K might be expected to decrease any danger of late bleeding into the injured areas during the first few postnatal days.

FOOD NUCLEUS TO INSURE OPTIMUM NUTRITION DURING PREGNANCY [76]

The following is a summary of the foods or their nutritional equivalents which should be eaten daily:

Whole milk	1 quart
Lean meat	At least one liberal serving (4 ounces); liver is desirable at least once each week
Egg	At least one
Fruit	Two or more servings (1 to 1½ cups, 200 to 300 Gm.) Two medium oranges, or unstrained orange juice (8 ounces) or its equivalent should be taken each day
Vegetables	Two or more servings of cooked or raw vegetables, (1 to 1½ cups, 200 to 300 Gm.); these should include dark green leafy or deep yellow vegetables, also legumes several times each week; in addition a medium potato (150 Gm.) cooked in the skin should be eaten daily
Bread and cereal	Whole grain or enriched bread at least four slices daily (½ cup cereal is equivalent to 1 slice of bread)
Butter or fortified margarine	2 tablespoons
Additional foods	Consisting of either more of the foods already listed or other foods of one's own choice, adjusted to individual energy needs and in relation to desired weight gain
Vitamin D	Some form of vitamin D to supply 400 to 800 international units

NUTRITIONAL REQUIREMENTS AND THE NECESSARY DIETARY ADJUSTMENTS TO INSURE OPTIMUM NUTRITION DURING LACTATION

The nutritional allowances suggested for the lactating woman by the Food and Nutrition Board of the National Research Council are shown in the table. The energy requirement during lactation may be increased 50 per cent or more above the normal requirement. The diet must furnish sufficient calories to meet (1) the mother's own energy requirement, (2) the caloric value of the milk secreted (20 calories per ounce [28.3 Gm.]) and (3) an additional small caloric requirement used in producing the milk which is estimated to be about 10 per cent of the caloric value of the milk produced.

The value of a high protein diet during pregnancy as an important factor in successful lactation has been discussed. An even higher protein intake is necessary during the lactation period itself. The recommended allowance is 100 Gm. daily, or approximately 2 Gm. per kilogram of body weight. A pronounced deficiency of calories and protein is usually associated with a reduction in the amount of milk produced.[77] The calcium and phosphorus requirements are also elevated during lactation; the calcium allowance for lactation is about 2 Gm. per day and the phosphorus allowance is correspondingly increased. Apparently the calcium content of breast milk varies much more widely than is appreciated; [78] it probably reflects the calcium content of the maternal diet. Balance studies of Macy [29] and others form the bases of these recommendations for protein, calcium and phosphorus.

The iron requirement during lactation probably is not increased and may be lower than during pregnancy because breast milk is low in iron.

The vitamin requirements of the lactation period are not known. The recommended allowance for vitamin A has been increased to 8,000 international units daily. This increase is explainable by the fact that the vita-

69. Lund, C. J., and Kimble, M. S.: Some Determinants of Maternal and Fetal Plasma Vitamin C Levels, Am. J. Obst. & Gynec. **40**: 635-647 (Nov.) 1940.

70. Teel, H. M.; Burke, B. S., and Draper, R.: Vitamin C in Human Pregnancy and Lactation: I. Studies During Pregnancy, Am. J. Dis. Child. **56**: 1004-1010 (Nov.) 1938.

71. Liu, K. B.: Case of Infantile Scurvy in the Newborn, China M. J. **45**: 995-996 (Oct.) 1931.

72. Shute, E.: Vitamin E in Habitual Abortion and Habitual Miscarriage, J. Obst. & Gynaec. Brit. Emp. **49**: 534-541 (Oct.) 1942; Vitamin E and Premature Labor, Am. J. Obst. & Gynec. **44**: 271-279 (Aug.) 1942.

73. Shettles, L. B.; Delfs, E., and Hellman, L. M.: Factors Influencing Plasma Prothrombin in the Newborn Infant: II. Antepartum and Neonatal Ingestion of Vitamin K Concentrates, Bull. Johns Hopkins Hosp. **69**: 419-426 (Nov.) 1939. Bruchhauser, F. S.: Vitamin K and the Prenatal and Postnatal Prevention of Hemorrhagic Disease in Newborn Infants, J. Pediat. **18**: 317-330 (March) 1941.

74. Parks, J., and Sweet, L. K.: Does the Antenatal Use of Vitamin K Prevent Hemorrhage in the Newborn Infant? Am. J. Obst. & Gynec. **44**: 432-442 (Sept.) 1942.

75. Warner, E. D.: Vitamin K and Hemorrhagic Disease of the Newborn, in Brennemann, J.: Practice of Pediatrics, Hagerstown, Md., W. F. Prior Company, Inc., 1936, vol. 1, chap. 32 A.

76. Burke, B. S., and Kirkwood, S. B.: Daily Diet During Pregnancy, Department of Maternal and Child Health, Harvard School of Public Health, Boston, revised 1946.

77. Garry and Stiven.[3] Garry and Wood.[3] Ebbs and Kelly.[4]

78. Stearns, G.: The Mineral Metabolism of Normal Infants, Physiol. Rev. **19**: 415-438 (July) 1939.

min A content of breast milk is high [79] and the infant's stores at birth are apparently relatively low. The thiamine allowance of 2 mg. represents only a slight increase over the amount recommended for pregnancy. The transfer of thiamine from the mother to breast milk is relatively poor but the maternal diet has been shown to be the principal determinant of the amount so transferred.[80] The recommendations of 3 mg. of riboflavin and 20 mg. of nicotinic acid are empiric. Macy and others [81] have shown that the concentrations of both of these vitamins are higher in the breast milk of women on diets of high composition than in the milk of women on self-chosen diets. The recommended allowance of 150 mg. of ascorbic acid rests on a somewhat sounder foundation.[82] The ascorbic acid content of human milk is much higher than that of cow's milk.[83] The allowance of 400 to 800 international units of vitamin D is the same as for pregnancy.

Those interested in more detailed information on the nutritional value of breast milk are referred to the recent papers by Macy and her co-workers.[84]

To insure an optimum diet throughout lactation each woman should be advised during late pregnancy and in the early postpartum period in regard to the changes which she should make in her diet for the period of nursing. An additional pint of milk—i. e., a total of 1½ quarts daily—furnishes the additional protein, calcium, phosphorus, riboflavin and thiamine suggested, as well as some of the additional vitamin A and calories. Liberal amounts of vegetables and fruits which should include the amount of citrus fruit recommended for pregnancy will cover the ascorbic acid allowance. Additional bread, cereals, potato and other foods of the woman's own choice usually must be included, because energy requirements are high during this period, but the extent of use of these foods must be varied in accordance with individual needs.

79. Lesher, M.; Brody, J. K.; Williams, H. H., and Macy, I. G.: Human Milk Studies: XXVI. Vitamin A and Carotenoid Contents of Colostrum and Mature Human Milk, Am. J. Dis. Child. 70: 182-192 (Sept.) 1945.

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Deaths From Battle and Disease.—In World War II, 13 men died in battle for every man who died from disease. In the Spanish-American War, the ratio was reversed, 13 men dying from disease for every man dying in battle. In the Civil War, 71 men per 1,000 troops died from disease each year. If the same rate had prevailed during World War II, the Army would have lost more than 1,600,000 men by death from disease instead of the number actually lost—13,700. — *Bulletin of the U.S. Army Medical Department*, April 1948.

PHYSICAL TREATMENT OF ARTHRITIS

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A difficult problem for most physicians is what to do for their patients with chronic arthritis. Unfortunately as yet there is no specific therapy; however, the physical methods are available and when properly and consistently used can be the most important single factor in the treatment of these patients. To be sure, since we are physicians we consider all the various medications, injections, diet, psychotherapy, surgery, etc., that are indicated, but I believe the statement can be made that, if one is deprived of everything else, one can depend on the physical agents to improve these patients both subjectively and objectively.

These measures to be most effective must be used frequently—that is, every day or even several times during the day. This means that the patient should be instructed on what to do in his home and calls for specific directions and methods that are relatively convenient, safe and inexpensive. I should like to stress these home treatments and give a few suggestions of what can be done. Nothing is better than the triad of heat, massage and exercise.

HEAT

Heat in any form increases the circulation to the part, relaxes the tissues and relieves pain. That certainly justifies its use. Most forms of heat are applied at least once a day, and two or three times a day are even better. Many methods of applying heat are available. The infra-red lamps are perhaps the ones most frequently employed. It is well to remember that the bulb type or the incandescent filament lamp penetrates to a greater depth than the so-called nonluminous form, which is made up of a solid iron rod or plate.

The color of the glass of the bulb type of lamp is a point often questioned. The glass from any of these lamps absorbs a certain percentage of the energy and a certain amount is lost by reflection. By physical laws a colored glass is likely to absorb more radiation than a clear glass, but this loss of energy is more theoretical than practical. The only benefit to be derived from the colored bulb is that it produces less glare than the clear bulb. These remarks are made since too often a physician buys a red-colored bulb with the hope that he is securing a larger source of infra-red rays.

Another factor of practical importance is the length of time that the joint or joints should be exposed to infra-red radiation. It has been found that the maximal elevation of the temperature of the skin is not reached until twenty minutes has elapsed, and the temperature does not level off until after about thirty minutes. This indicates that a treatment should be at least thirty minutes to secure the best physiological benefit. The practice of using a hand lamp for five to ten minutes is a waste of time. Thus in prescribing heat treatments for the home with an infra-red lamp it is well to consider the comfort and convenience of the patient. Separate infra-red bulbs are often purchased by patients for use in their reading lamp or whatever they have at home. This changing back and forth is troublesome

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Read in a Panel Discussion on Physical Medicine in General Practice before the meeting of the Section on Miscellaneous Topics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

and soon discourages even the most faithful. It is more practical to recommend a lamp that is mounted on a stand, either the floor model or the table model, since they are more likely to be used for the necessary time. Dr. Krusen has suggested the use of a cup-shaped polished reflector similar to those used in photography with photo flash bulbs. This reflector is attached by means of a ball and socket joint to a small clamp which may be fastened to the back of a chair or to the bed. One may use a 250 watt "Mazda" Cx bulb or a 200 watt carbon filament bulb in this lamp, and the entire outfit will not cost much more than $5 or $6.

A more elaborate and expensive means of applying infra-red radiation is by the baker, which is merely an oven-like affair in which four to eight incandescent bulbs are suspended. This is most useful if both knees or the lower extremities are to be treated. It is also useful for the back. These bakers may be secured from the War Surplus Administration, but this usually requires influence and an unlimited amount of patience. The Council of Physical Medicine of the American Medical Association will supply the details on making such a baker.

Another simple and inexpensive means of applying heat to joints is by the use of paraffin. All that is required is eight to ten pounds (3.6 to 4.5 Kg) of paraffin such as is used to seal jelly or fruit jars and a container to heat it. A double boiler is more convenient and safer, since this prevents setting the paraffin on fire. The wax is melted and then removed from the fire, and when a thin film forms on the surface it is at the right temperature for the patient to use. If it is for the hands, he dips them in the paraffin and then removes them when the paraffin solidifies. This is repeated eight to ten times until a glove of about one fourth inch (0.64 cm.) or so has formed. The hands can then be wrapped in a bath towel for fifteen or twenty minutes, after which the paraffin is peeled off; it can be used over and over again. For joints other than the hands, a paint brush may be employed and the paraffin painted on.

When numerous joints are involved, as in rheumatoid arthritis, the full tub bath can be recommended, since it heats all the joints and has the additional advantage that, while the patient is in the tub, he can be urged to exercise the affected joints. The temperature of the water should not exceed 100 F., and the treatment should last about twenty minutes.

MASSAGE

After the use of heat in any of these forms, massage should follow. Physicians neglect massage because they know so little about this measure and more often than not have never been told or shown how to give a massage.

Massage is capable of producing definite physiologic effects which are most beneficial to the arthritic patient. The ideal would be to have a physical therapeutist give the massage daily, but this would be an expense which but few arthritic patients could tolerate; therefore some member of the family should be instructed in the method of giving a massage. In most instances the amateur masseuse can do a reasonably good job. If the physician cannot give instructions for massage he owes it to his patient to see that a physical therapeutist shows the methods to someone in the family. The technic of giving a massage is given in the "Handbook of Physical Medicine,"[1] the book that has been prepared by the American Medical Association for the general practitioner.

EXERCISE

After the heat has been applied and the massage has been given, the patient is ready for the exercises. This is one of the most valuable forms of physical therapy, particularly for the patient with the rheumatoid arthritis. Nothing is more pathetic than the plight of a patient with rheumatoid arthritis who has deformities and contractures which in many instances might have been prevented. It is believed that if such a patient will go through the full range of motion once each day for all the joints involved, he can be reasonably assured that he will not be a cripple. In the early stages of the disease the exercise are relatively simple and cause little pain, but if the patient is not properly instructed, he will delay movement of joints in hope that the pain will disappear. In too many cases it is then too late, for fibrosis, adhesions and even bony ankylosis may have occurred. In my opinion irreparable damage is done by advising the patient to go to bed and remain there until all swelling or pain has disappeared. This may take thirty or forty years. Immobilization results in weakness and loss of muscular tone and leads to atrophy and eventually deformities. On the other hand, a patient with rheumatoid arthritis is warned against too much exercise. Often such a patient exercises a joint as much as possible, hoping thereby to prevent stiffness. This also is incorrect.

During the relatively acute stage the exercises are done slowly and increased according to the tolerance of the patient. It is well to remember that certain muscle groups, such as the flexors and adductors lead to deformities; therefore exercises for their antagonists —namely, the extensors and abductors—should be stressed. In the beginning merely going through one or two movements for each joint will be sufficient; later this can be increased to several times during each day and, finally, by weight-bearing exercises. "Proper exercises never increase the activity of an arthritic process."

Exercise for the joints, although most important, is monotonous. There is no substitute for active movement of each individual joint; however, additional exercises may be suggested in the form of occupational therapy, which makes the patient forget the exercise in an effort to accomplish a task. This not only supplies the physical activity but has a psychologic incentive as well. By the proper methods this form of therapy can be directed to insure exercises for any joints desired. Occupational therapy is not confined to the hospital but should be used in the home, since many simple devices are available that can be suited to the interests of each patient.

A HOSPITAL DEPARTMENT OF PHYSICAL MEDICINE

All the physical measures that I have mentioned thus far are most effective and practical and relatively inexpensive and should be recommended for use in the home. There are other physical agents that are more complicated and costly and require more technical experience. This leads me to a subject that I would like to bring to your attention; namely, a department of physical medicine in a hospital. To the physicians in the larger cities and in the larger hospitals, the department of physical medicine is considered a necessity and is widely used in treating the arthritic patients; however, in the smaller communities it is rare to find a department of physical medicine. This also applies to the smaller hospitals in the larger cities. If such a

1. Handbook of Physical Medicine, Chicago, American Medical Association, 1945.

department has proved to be helpful and worth while in larger hospitals, why should not its services be equally important in the other institutions? Today more and more physicians have equipped their offices with physical therapeutic apparatus, but few general practitioners have either the need for an extensive outlay or the time necessary to administer all of these treatments properly. The busy practitioner cannot afford to devote approximately an hour of his time for each arthritic patient, which may be necessary for such therapy. The solution to the problem is a department of physical medicine in the local hospital where the personnel, space and equipment may be made available. It is expected that the superintendent or administrators of the hospital will find objections for any additions or changes, but, if the demands are made, ways and means can certainly be found. The Council of Physical Medicine of the American Medical Association can be helpful in supplying plans for a small department and in telling about the services and means of securing physical therapists. The department in the hospital will provide the practitioner with facilities that are adequate and ethical. Unfortunately, too often the busy physician is forced to send his patient to masseurs, gymnasts or even members of various cults for physical therapy because the hospital in his community does not fulfil his needs.

Of course a department of physical medicine in a hospital would be utilized for the treatment of all diseases and disorders. However, it is the patient with chronic arthritis who receives the greatest benefit and who keeps the department busy. The assistance from such a department and the all-important physical treatments which are prescribed in the home will secure results that assure the greatest satisfaction to both the physician and the patient with arthritis.

PHYSICAL MEDICINE IN THE TREATMENT OF THE AGED

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The aging person is faced with the possibility of gradual physical and mental deterioration. On the physical side, changes occur in the elastic tissues of the body, such as those found in the blood vessels, as well as in the synovial membranes of joints and the skin. These changes produce physiologic alterations associated with a decrease in the rate of tissue exchange and in the nutrition of the affected part. Many of the mental conditions result from vascular changes in the cerebral vessels which affect the circulation of the brain. Diminishing acuity of vision and hearing also are common findings in the aged.

In discussing the subject of physical medicine in these persons one has the valued presentations of both Dr. Krusen [1] in *Geriatrics* and Dr. Kovacs [2] in his chapter in Stieglitz's book, "Geriatric Medicine"; they have presented a careful outline of the physical medicine procedures available, with reference to their particular application in geriatric patients. I wish to approach the problem more directly from the standpoint of the patient, with a consideration of some medical and surgical conditions which commonly afflict patients in the older age groups and to indicate briefly how physical medicine can aid the patient with these conditions.

In the data on conditions which are prevalent in the older age group there are differences, depending on whether one considers the mortality, prevalence or disability statistics. At the head of the causes of death is heart disease with associated vascular conditions, and in second place comes cancer. If prevalence is taken as the guide, then the cardiovascular ailments come first and rheumatic conditions come second. When chronic disability is the test, then nervous and mental diseases lead with cardiovascular ailments and rheumatic conditions in second and third place, respectively. Physical medicine is not the only form of therapy which is applicable in these conditions, and any comments which I make about physical therapy must be coordinated in the whole program. Only when the physician brings into play all forms of therapy will the patient obtain the maximum benefit from his medical care.

NERVOUS AND MENTAL DISEASES

The melancholias frequently occur in aging patients, particularly during or following the climacteric. For these patients electric shock therapy is widely applied. I do not wish to detail the specific technics in this field, but only to point out that this method of treatment is the application of a physical agent.

For the patients with senile psychoses or psychoses associated with arteriosclerosis the simple forms of heat in definite moderation may be useful. The very simplest forms of heat which can be regulated more by the temperature of the room than any local application may be all that is safe for these patients. Such exercise as the patient's condition will allow is of value in preventing even a more rapid deterioration. The big contribution of physical medicine is the use of occupational therapy, the teaching of the patient to do some particular piece of work instead of just letting him sit and gradually deteriorate. Occupational therapy will not stop the progress of aging in these patients, but the later years of their lives will be much more happy years if the occupational therapeutist provides them some simple work activity. It must be within their mental capacity and not sufficiently exhausting to tire them physically.

Dinkin [3] has recently outlined a plan for the study and treatment of the patient with hemiplegia. Motor function tests, which indicate the power available in the different muscle groups, as well as activity tests which determine how well the patient uses the remaining power, are necessary. The physical measures used are dependent on how much the patient is able to do. He recommended the use of passive exercises; the physical therapeutist puts the extremities through the maximum range of motion possible once or twice a day to prevent contractures and to increase the confidence of the patient. One should start this early and not wait for the development of contractures or other limitations. Simple pulley exercises performed by the patient are useful for treatment of limited shoulder motion. They aid in restoring confidence because the

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Read in a Panel Discussion on Physical Medicine in General Practice before the meeting of the Section on Miscellaneous Topics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

1. Krusen, F. H., and Leden, U. M.: Some Applications of Physical Medicine in Geriatrics, Geriatrics 1:409 (Nov.-Dec.) 1946.

2. Kovacs, R.: Principles of Physical Therapy as Applied to the Aged, in Stieglitz, E. J.: Geriatric Medicine, Philadelphia, W. B. Saunders Company, 1943, chap. 7.

3. Dinkin, H.: The Evaluation of Disability and Treatment in Hemiplegia, Arch. Phys. Med. 28:363 (May) 1947.

patient uses his good arm to move the paralyzed arm.

Daily galvanic or faradic stimulation of flaccid muscles to maintain tone and weight is suggested. Massage may be of some aid, but it will not put power into a paralyzed muscle. Important are muscle re-education and walking exercises.

Occupational therapy is important for the development of the functional activity, projects being used which call for the use of the affected hand, arm or leg. They should include the technics of dressing, eating, standing, walking, etc., all of which are important in the activity program of the hemiplegic patient. Dinkin stressed the great value of starting early, having a definite plan, the building of morale and a persistence in the work as important factors leading to success in caring for the hemiplegic patient.

The patients with paralysis agitans or the Parkinson syndrome need to be treated with a definite program of activity. Exercise is important. However, it must be moderate to avoid fatigue. Many of these patients can perform fine movements when they are unable to perform large sustained movement in any one direction. Massage and relaxing baths have been recommended in this group, but they are generally found to be of only temporary aid and the disease process seems to progress in its usual form. It has been my good fortune to follow a number of these patients for a period of years, with the use of the natural carbon dioxide bath. Inasmuch as many among these patients have a vascular disturbance, some improvement has been noted in this program. However, over a period of years, I have not been able to demonstrate that it has prolonged life. It has helped them to live more comfortably in their declining years if this bathing program is followed regularly.

CARDIOVASCULAR AILMENTS

Every physician is familiar with the many patients in the older age groups who suffer from progressive coronary disease, hypertension and, to some degree, myocardial failure resulting from these two conditions. Arteriosclerosis and other vascular conditions may limit the supply of blood available to an organ or extremity. In the past physical medicine has not been considered to be an important arm of therapy in the heart conditions, although it has received considerable attention for the patient with peripheral vascular disease. Some publications have stressed recently the importance of a physical program of treatment, not to provide a complete cure but for aiding the cardiac patient so that he could live a more comfortable and, in some cases, a more active life. The program for this group might well be divided into two parts.

First, there is the program which can be used at home, where many patients who are limited in their activity because of decreased cardiac reserve may well benefit from simple passive and mild active exercise, as well as from the use of massage during their period of inactivity. The intelligent application of these physical measures is helpful in preventing muscle deterioration and in keeping the patient in better physical condition to take up increased activity as his cardiac condition improves. The extent to which this program may prevent the development of peripheral thrombosis and subsequent pulmonary emboli can be determined only after a long period of study with corresponding control groups. There should be a happy medium between the long continued bed rest for the patient with coronary occlusion and infarction as compared with too short a period for these patients. Physical medicine can be of value to the internist in his program of handling this group of patients.

The second phase of the physical medicine program as applied to the patient with heart disease has been built around the spa, where the cardiac patient follows a program of bathing in carbon dioxide mineral waters for a period of two to four weeks, once or twice yearly. Comstock and Stroud [4] have discussed this program, as have Lambert,[5] Leaman [6] and McClellan.[7] There is evidence to indicate that the absorption of carbon dioxide through the skin from the mineral water bath produces a direct influence on the smaller peripheral vessels. It is accumulated in the body and an increased output through the lungs of 10 to 25 per cent occurs. The clinical studies reported indicate that these patients have less anginal pain and are able to exercise to a greater degree without evident discomfort than they could before.

In peripheral vascular disease, particularly associated with arteriosclerosis, numbness, tingling and the usual symptoms resulting from diminished circulation in the extremities are reported. The physician may say, "Well, apply some heat to the extremities." Without careful specification of the type and amount, the patient overdoes the application, resulting at times in severe burns. Heat is of value, but only in distinct moderation and applied in such a manner that there is no possibility of raising the temperature of the extremity beyond the temperature of the body. It is best applied in a heat cradle or baker with a thermostatic control. Gentle applications of infra-red heat are useful but again must be carefully checked not to overheat an extremity. The use of hot packs, mud packs, diathermy and even baths above a temperature of 96 F. may be detrimental. There is value for these patients in heat, but it must be moderate. It also is important that the form of heat used shall be available for considerable periods of time.

Contrast baths—namely, the exposure of the extremity to hot water and then to cold water—have been suggested by some writers, but Wright,[8] in his recent review of the problem, expressed the opinion that this procedure is dangerous for these patients. I would agree that they do not respond well to sudden changes of temperature, and in the ideal treatment one seeks moderation in temperatures as well as activity, avoiding the extremes of either heat or cold.

Other forms of physical medicine have been applied. There have been considerable differences of opinion in the results obtained from the suction pressure apparatus, from the apparatus which permits intermittent venous occlusion and from many of the electrical procedures. There are some who feel that properly applied diathermy to the lower part of the back may be helpful in releasing some of the spasm associated with the limited circulation of the lower extremities. With Dorrance,[9] I was able to study the amplitude of pulsation

4. Comstock, C. R., and Stroud, W. D.: in Stroud, W. D.: Diagnosis and Treatment of Cardiovascular Disease, Philadelphia, F. A. Davis Company, 1940, chap. 42.
5. Lambert, A.: The Action of the Autonomic Nervous System as an Explanation for the Therapeutic Value of the Carbonic Acid Baths in Degenerative Cardiac Diseases, New York State J. of Med. 38:147 (Feb. 15) 1938.
6. Leaman, W. G., Jr.: The Value of Physical Therapy in Management of the Cardiac Patient, Arch. Phys. Therapy 23:15 (Jan.) 1942.
7. McClellan, W. S.: The Place of Carbon Dioxide Baths in the Treatment of Diseases of the Circulation, Internat. Clin. 1:199 (March) 1937.
8. Wright, I. S.: Arteriosclerosis, in Stieglitz, E. J.: Geriatric Medicine, Philadelphia, W. B. Saunders Company, 1943, chap. 30.
9. Dorrance, S., and McClellan, W. S.: Effect of Natural Carbonated Baths on Rate and Amplitude of Pulse and Blood Pressure, Arch. Phys. Therapy 21:133 (March) 1940.

in a considerable number of patients before and after the carbon dioxide bath. In some we found a definite increase in the amplitude of pulsation. This was less marked in the lower extremities than in the upper extremities. It appeared that in many of these cases organic disease or arteriosclerosis is associated with spasm in the peripheral vessels of the lower extremity. The use of the bath brings about some decrease in spasm, allowing for an increased pulse amplitude. If the changes in the patient were primarily organic, then we found little or no change in the pulse amplitude. We concluded that the response of the patient to physical measures such as the bath and others of a similar type will largely depend on what proportion of the limitation is due to the spasm and what to organic arteriosclerosis. When the latter predominates, then one can expect little change in the amount of blood passing through the occluded vessels. These measures help to make use of the available channels to the best advantage and should be carefully selected and applied in this group of patients.

The program of treatment should provide for the whole day. It is of little value to apply gentle heat to an extremity of a patient in the clinic and then have him go by bus or streetcar through the chilly day to his home, as the exposure to the cold will many times more than counteract the benefit obtained from the treatment.

RHEUMATIC CONDITIONS

Physical medicine has probably had its widest application in the treatment of arthritis and related conditions. Most of these patients seek some form of baths or other physical treatment sometime in the course of their disease. In the aging patient, osteoarthritis is more common that rheumatoid arthritis, although no age group is free from rheumatoid arthritis. Gout will manifest itself in many age groups, and, while it may not commonly start in the older patients, it will cause disability from its persistence over many decades.

In the treatment of arthropathies, particularly of the rheumatoid type, tested measures include, first and foremost, rest, particularly in the acute phases. The application of heat from various sources is soothing, but in the acute swollen joints it often will aggravate and will increase the discomfort. It may properly be applied during the convalescent period when the residual swelling and exudate will produce limitation of motion. Important also is the application of gentle massage, not to the inflamed joint, but to the muscles acting about the joint. This is of particular value in helping to maintain good muscle condition. Exercise should be started early, beginning with the passive movement through the possible range of motion once or twice daily in order to prevent limitation and stiffening. It may be extended as the patient's condition improves to a more vigorous, active program in this field, the goal in the application of physical measures being to avoid overtreatment but to prevent muscle deterioration and contracture. With properly applied physical measures, prevention must be stressed because it is easier to prevent than to correct a troublesome, crippling condition.

Patients with osteoarthritis will tolerate heat in greater amounts with the use of heat cabinets or warm baths. They also tolerate sedative massage and rhythmic exercise, and in some even the contrast bath may be used. Most of the patients with osteoarthritis can tolerate a more vigorous program of treatment than can the patients with rheumatoid arthritis. However, the intensity of the treatment would largely depend upon the general condition of the patient, and a careful observation of the patient's response to the treatment is important in checking his progress. If the patient suffers additional pain beyond an hour following the treatment, or if there is evidence of increased strain on the heart as evidenced by faster, rapid pulse rate, then the program must be modified to meet the needs of the patient.

Physical measures recommended for patients with gout include both hot and cold applications to the acutely tender joint. Observation of a considerable number of patients indicates that these applications give at least temporary relief; in some patients they appear to shorten the period of disability. They do not, apparently, modify the course of the disease, but their use is justified because they give relief.

In other forms of rheumatic disorders, such as neuritis, fibrositis and myositis, physical medicine can do a real job. It must be specifically applied, and time does not permit the outline of detailed physical measures for each condition. The general principles already outlined apply here.

TRAUMATIC CONDITIONS

The elderly person is subject to falls and injuries, with resulting fractures and other traumatic conditions. Physical measures can give relief and can shorten periods of disability. It is important to keep the portions of the body which are not affected in as good condition as possible with the use of corrective physical exercises and movements which will prevent deterioration and loss of muscle power in the good extremity or in the remainder of the body as a whole. When properly applied they will keep the patient in better condition to become active after the fracture or injury is healed. Again, as in the other sections of this discussion, the early application of heat in the region of the fracture is of value but should be in moderation. Diathermy is not indicated, as there is some evidence that it may delay the healing of fractures. Gentle movement as early as possible in the hands of an experienced therapeutist is of value. The amount and the extent of this movement and exercise must, of course, be indicated by the physician in charge, as he is familiar with the disability. The program for these patients carries on through the convalescent period, during which both physical therapy and occupational therapy can play a real part in aiding a patient in his return to a more normal natural period of activity. This is true for the older patient as for those in the active working period of life. In the older age groups some consider that treatment work of this type is not productive because of the limited years of life expectation ahead. It is of value in reducing disability and discomfort.

GENITOURINARY CONDITIONS

Outside of the use of electrosurgery in the field of prostatic operations, physical medicine has not been widely applied. Many physicians have recommended for prostatic congestion and pelvic inflammatory disorders the use of the hip bath, known as the "sitz" type of bath. This will give considerable relaxation but in no way is a substitute for a careful study, diagnosis and treatment of the medical condition. Local fever therapy does not seem to be stressed as greatly today as a decade or two ago. The use of diathermy will give relief in many pelvic conditions, but it must be used with caution wherever infection is present.

SUMMARY

There are a number of questions which physicians may properly raise and to which attention should be given in view of the recommendations that I have discussed. The first question is how can the general practitioner provide these measures. The physician sees the large physical therapy department with its many machines and appliances and feels that it is beyond his ability to provide this service. A more careful study of physical medicine stresses the need for the development of simple home procedures such as can properly be applied by the patient alone, or by someone in the patient's family. This eliminates the tiresome trip to the clinic and even the occupancy of a hospital bed, and offers the opportunity for a more frequent application of the procedures. In any place where the patient has electric current or a water supply or some method of heating the water, many of the applications which I have mentioned can be used. In many a home there is no bathtub available. However, when it is present, the use of baths at various temperatures can be prescribed, and they have a real soothing effect for many of the conditions producing discomfort in the aging patient.

One hears much about rehabilitation today. For the aged patient, rehabilitation means making life more comfortable for the patient, making him feel that he is needed and wanted by society. Physical medicine, with its associated programs of physical and occupational therapy, and corrective physical exercises can play a great part for this group of patients in helping them the better to carry on through the declining period of life.

One phase of physical medicine relating to the aged patient should be stressed. I have to this point been discussing definite physical diseases and ailments. Physical medicine has a part in the preventive field among the aged. A proper program of exercise, of massage, of the use of baths such as provided in the spas, is of value in keeping the aging patient in good condition, making unnecessary, perhaps, some of the specific application of physical medicine for medical conditions. One form of physical medicine which is neglected is the field of exercise, and in particular proper breathing exercises. Due to the inactivity of the elderly patient, he breathes in a very shallow manner. The respiratory exchange is at a minimum. There may be a deficiency of oxygen due to this failure to carry out the breathing exercise properly. A regular program of deep breathing will provide the patient with an increased amount of oxygen and will improve the general condition of the patient.

One question which arises in this group is how far to permit exercise. In the aged should one not limit activity? This can be answered only by a careful consideration of the individual patient. The aged King of Sweden has played tennis until recently. Others who have not attempted regular exercise through most of their middle life will find this too strenuous. Golf has, of course, had its place. Many players in their seventies and even in the eighties are playing golf today and derive a great deal of benefit from it. However, telling a patient at 70 or 75 to start playing golf is, I believe, a mistake. In other words, no one can determine for a patient the amount of exercise that can be allowed, but it must be determined for each person on the basis of his physical and mental capacity.

One final word in the application of physical medicine in the aging patient is the requirement and recommendation of dosage. This, I believe, should be stressed and if this procedure is followed carefully, through moderation and careful prescription of the physical medicine procedures some of the damages will be avoided which are unfortunately mentioned as a result of use of physical medicine.

PHYSICAL MEDICINE AND THE LAME BACK

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The main object of physical medicine in instances of lame back is to restore the normal physiology of the spine. It must be remembered that backache is only a symptom of some underlying postural difficulty, trauma or diseased condition which produces a train of events resulting in pain low in the back. In addition to this, there may be pain in some of the nerves of the lumbar or sacral plexus, the sciatic nerve being most frequently affected.

The integrity of a joint depends on a normal alinement of the articular surfaces, strong ligaments and a normal musculature which moves and aids in supporting that joint. When disease, injury or postural abnormalities occur, this whole mechanism is thrown out of gear. The muscles which support and activate the joints lose tone and strength, with the result that additional burdens of stress and strain are thrown on the supporting structures and cause pain. If the pain continues, atrophy and spasm of the muscles increase and the disturbance is prolonged.

Recurrent attacks of backache are likely to occur even after slight injuries or certain minor movements if no attempt has been made to restore normal spinal function or the normal physiologic curves of each individual spinal division or segment. Prolonged distortion of these curves is too likely to be the fundamental cause of the recurrent, chronic lame back.

In the acutely lame back, relief of pain by rest in bed, plus sedatives, is indicated. The bed should be firm and the mattress flat. If the bed sags, a board 20 inches (51 cm.) shorter than the spring should be placed under the mattress. The board must not be used if it makes the patient more uncomfortable. A great deal of pain is due to muscle spasm, which can be alleviated by sedatives, the type and the frequency of the dose depending on the amount of pain and the relief obtained. Sometimes constant bed therapy is irksome. In that case, the patient should be allowed to sit up, out of bed, for short periods. This often decreases the discomfort.

HEAT

Hot packs applied for fifteen or twenty minutes twice a day are most helpful. Baking with a heat lamp for the same length of time also gives relief, but prolonged heating is not curative, as it increases congestion. The object of the heat is to relieve congestion; it does not decrease atrophy or heal injured or diseased tissue.

MASSAGE

In acute back trouble, massage must be used with discretion; it should be in the form of gentle effleurage. Too many backs are made worse by plowing and heavy massage. The object of the massage should be

Read in a Panel Discussion on Physical Medicine in General Practice before the meeting of the Section on Miscellaneous Topics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

to promote circulation and the relaxation of muscle spasm. Some patients do not tolerate massage at all; it must not be used in such persons. The well trained physical therapeutist should be able to recognize such idiosyncracies. When the patient is able to be up, his back should be protected by a well fitted corset or some adequate support.

EXERCISES

When the pain and muscle spasm have subsided, special exercises should be prescribed in order to help restore function and maintain the physiologic curves of the spine. The principal supporting muscles of the lower part of the back are the large gluteal and abdominal muscles. After a severe episode, the first course of exercises should be devoted to increasing the tone of these two groups of muscles; one begins by instructing the patient, while lying on his back, to contract his glutei maximi. This should be done five times every half hour throughout the day and gradually increased until it is done one to two hundred times daily. This maneuver must be slow, firm and steady. Short, jerky movements will not develop muscle tone and may cause pain. If there is no recurrence of pain, the patient is next instructed to raise his head and shoulders a short distance from the bed, when in a supine position. He should do this five times every hour, holding this position for two or three seconds at a time. This exercise should be gradually increased until it is done one hundred times through the day. As the muscles show firm tone and good power, fifty exercises morning and night should be performed. When one gluteal muscle is smaller than its fellow, the patient lies on his face with a pillow under his abdomen and hyperextends his thigh on the atrophied side against gravity. This should be done a few times every hour, later on fifty being done twice daily.

If the iliotibial bands and anterior fascia lata are contracted, the lateral fascia is stretched by leaning sideways in a doorway or with a hand on a bureau, so that the body and affected leg form an arc with the bow toward the affected hip. Usually five to fifteen stretches, twice daily, will stretch out the iliotibial bands and help to relax a restricted straight leg raising. Later the anterior contracture is stretched by pulling on the ankle so as to increase knee flexion. The thigh must be held in line with the body. Stretching of fascia lata must not be done in the presence of sciatic pain, because to do so will only aggravate the pain. Forward bending exercises while standing are likely to produce pain and must not be given until all the contractures have disappeared.

Many patients who have pain low in the back have short heel cords and short hamstrings. Short heel cords are often a factor in producing pain in the back in those who stand for long hours in a forward bent position. This condition may be relieved by standing with the ball of the foot on a book or board and let the weight of the body do the stretching. The knees must be completely extended in order to get the full benefit of the stretch. The shortened hamstrings can be stretched by the patient, who is instructed to stand on one leg and to place the heel of the other, knee extended, on a low chair or stool. He then bends forward slowly as far as he can and remains in that position for at least three seconds, repeating several times (ten to twenty) two or three times a day. This is persisted in until he is able to reach the floor with his fingers without flexing his knees. When all contractures of the hamstrings, calf muscles, and fascial structures have been relieved, and the muscles which protect and support the back have normal tone, contour and strength, exercises to correct faulty posture should be prescribed and continued until normal posture can be maintained without conscious effort.

Occasionally one sees a type of stiff back in which it is not possible to reverse the lumbar curve by forward bending. This condition is difficult to overcome, but it can be accomplished by prolonged protection and physical measures devoted to stretching the lumbar fascia and muscles in the following manner: The patient is instructed to lean over several times a day, first in a chair and later in the standing position, as far as possible, remaining there for at least one minute without straining and as relaxed as possible. One other exercise is also helpful, and that is done in the supine position. The patient flexes the knees and thighs and grasps his knees with his hands and rolls them toward his chin, holding the position for several seconds, ten or fifteen times at least twice daily.

When a spine has been operated on to relieve pain in the back, exercises to restore muscle function will shorten the convalescent period. It must be borne in mind that operations involving joints are a form of trauma and that muscle atrophy occurs afterward.

SUMMARY

Heat, massage, and proper exercises will result in the cure of many lame backs. Heat and massage are helpful but do not restore power. Exercises to develop musculature will restore power and function. Exercises to correct faulty posture, secondary to the lame back, will minimize the severity of later attacks and often give permanent results.

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PHYSICAL TREATMENT OF COMMON DERMATOLOGIC LESIONS

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All branches of medicine have made tremendous advances during the past two decades. Many of the advances in dermatologic therapy have been made in the field of physical medicine. New technics have been devised, old ones have been improved and new physical agents have been introduced into the armamentarium of the dermatologist.

To appreciate the importance of physical therapy in dermatology, one has only to peruse the agents employed in the treatment of diseases of the skin. Among these agents are ionizing radiations, especially roentgen rays and radium. Agents which emit alpha rays, such as radon in ointments and gases, thorium X in solutions and ointments and polonium in solutions, have been used to a limited extent. Encouraging results are being reported with the use of radioactive isotopes in the treatment of systemic diseases having cutaneous manifestations such as mycosis fungoides, Kaposi's sarcoma, leukemia cutis, Hodgkin's disease and polycythemia vera. Perhaps the literature of the near future will have recorded the successful use of radioactive isotopes for such diseases as exfoliative dermatitis, chronic universal psoriasis and the large group of generalized

Read in a Panel Discussion on Physical Medicine in General Practice before the meeting of the Section on Miscellaneous Topics at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

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recurrent and chronic papular erythrodermias, subacute lupus erythematosus, pemphigus, dermatitis herpetiformis, multiple primary and metastatic cutaneous malignancies and perhaps even xeroderma pigmentosum. Even the severe generalized fungous diseases such as blastomycosis and actinomycosis might respond to the internal administration of radioactive isotopes. The future of atomic energy for the study and treatment of dermatologic conditions is full of possibilities.

ROENTGEN RAYS AND RADIUM

The use of roentgen rays and radium in the treatment of skin disease is no longer an experiment. There are over eighty skin diseases which respond well to treatment with roentgen rays or radium. Amongst this group may be mentioned angioma, acne vulgaris, actinomycosis, blastomycosis, granuloma coccidiodes, dermatophytosis, favus, tinea capitis, onychomycosis, mycosis fungoides, leukemia cutis, Hodgkin's disease, Kaposi's sarcoma, epitheliomas, some cases of melanoma, neurodermatitis, psoriasis, lichen planus, verrucae, furunculosis, carbunculosis, keratoses, keloids, hyperhidrosis and tuberculodermas including scrofuloderma and tuberculous adenitis. The most effective therapeutic agent to control the present epidemic of ringworm of the scalp has been the application of temporary epilating doses of roentgen rays to the entire scalp.[1]

ULTRAVIOLET RAYS

Ultraviolet radiations are not as extensively used in dermatology as in former years, but they are used more critically and in a more precise manner. The average dermatologist employs in his office or clinic an air-cooled and a water-cooled hot quartz mercury arc lamp and a "cold quartz" type of lamp. He also employs black light or "Wood's light" for diagnostic purposes. In fact, were it not for this type of filtered ultraviolet ray generator, it would have been impossible to begin to control the nationwide epidemic of ringworm of the scalp raging among the school children of this country. With "Wood's light" [2] it has been possible to detect and isolate those afflicted with the disease who show no clinical manifestations of it.

Ultraviolet rays [3] have been found useful in a large number of diseases of the skin, the most important of which are acne vulgaris, dermatophytosis, neurodermatitis, eczema in infants, eczema seborrheicum, furunculosis and folliculitis, pityriasis rosea, parapsoriasis, essential pruritus, psoriasis, tuberculodermas, including lupus vulgaris, scrofuloderma, erythema induratum and orificial tuberculosis, and some slowly healing ulcers and wounds. The Goeckerman treatment for psoriasis, which consists of the application of crude coal tar ointment prior to exposure to ultraviolet rays, has been found particularly efficacious for this stubborn and recalcitrant disease.

The bactericidal rays of the cold quartz type generator are useful in the treatment of some infected ulcers and wounds and may cause quicker involution of impetigo contagiosa, pemphigus neonatorum and other pyodermas. Because "cold quartz" ultraviolet rays cause exfoliation, they are useful in the treatment of pityriasis rosea, tinea versicolor and pits and scars following acne vulgaris and smallpox.

Before leaving the subject of ultraviolet rays, it is necessary to emphasize that they should never be used in the treatment of lupus erythematosus because after an intense reaction some cases of discoid lupus erythematosus may become generalized and terminate fatally. Germicidal ultraviolet ray lamps have not been used as yet to any extent by American dermatologists for the treatment of diseases of the skin. At this time I know of no evidence that would support the contention that short wave length ultraviolet rays would prevent pemphigus neonatorum, impetigo contagiosa and other pyodermas.

HIGH FREQUENCY CURRENTS

High frequency currents [4] are used for medical and surgical purposes. Fever therapy has been used for the successful treatment of neurosyphilis and for some cases of generalized chronic and recalcitrant dermatosis. High frequency currents are used mostly in dermatology for destructive purposes for such lesions as keratoses, leukoplakia, nevi, papillomas, epitheliomas, Bowen's disease, melanomas, fibromas, granuloma pyogenicum, cutaneous sarcoids, small lesions of lupus vulgaris and lupus erythematosus, verrucae and xanthomas. Hypertrichosis [5] can be safely and effectively treated with high frequency currents provided the equipment is especially constructed for this type of microdestruction of hair follicles.

GALVANIC CURRENT

The galvanic current [6] is used for common ion transfer especially for the treatment of dermatophytosis, pompholyx, nummular eczema, varicose ulcers, scleroderma and Raynaud's disease. In dermatology, the galvanic current is used mostly for the destruction of such lesions as hypertrichosis, telangiectases, nevi, keratoses, adenoma sebaceum, benign cystic epitheliomas and verrucae.

SOLID CARBON DIOXIDE

Refrigeration with solid carbon dioxide is useful in the treatment of verrucae, nevi, angioma, larva migrans, keratoses, many pigmentary disturbances, lupus erythematosus and lupus vulgaris. A paper is being read at this centennial meeting of the American Medical Association on the use of liquid oxygen for the treatment of many small lesions of the skin,[7] most of which have been mentioned in this paper. Liquid oxygen is so cold that it acts as a cauterizing agent.

OTHER AGENTS

Other agents used in dermatology are balneotherapy, posture, massage and infra-red rays. Time does not permit discussion of these agents. However, baths containing such medicaments as starch, bran, magnesium sulfate, sodium bicarbonate, tar, sulfur, gentian violet, silver nitrate and potassium permanganate are useful for such diseases as exudative and extremely pruritic eczematous eruptions, pemphigus, dermatitis herpetiformis, extensive folliculitis and multiple furunculosis, impetigo of the newborn, urticaria and ichthyosis. Some long-standing extensive dermatoses may be debilitating, and baths may be used for their tonic, stimulative or sedative effects. Beneficial effects from strapping and posture are noted in those cutaneous diseases secondary to vascular disturbances, such as in ulcers and wounds

1. MacKee, G. M., and Cipollaro, A. C.: X-Rays and Radium in Treatment of Diseases of the Skin, ed. 4, Philadelphia, Lea & Febiger, 1946.
2. Costello, M. J., and Luttenberger, L. V.: Fluorescence with the Wood Filter as an Aid in Dermatologic Diagnosis, New York State J. Med. 44: 1778 (Aug. 15) 1944.
3. Cipollaro, A. C.: Light Therapy in Dermatology, Arch. Phys. Therapy 23: 133. (March) 1942.
4. Handbook of Physical Medicine, Chicago, American Medical Association, 1945, p. 331.
5. Karp, F. L.: High Frequency Current in the Treatment of Hypertrichosis, Arch. Dermat. & Syph. 43: 85 (Jan.) 1941.
6. Cipollaro, A. C.: Electrolysis, J. A. M. A. 111: 2488 (Dec. 31) 1938.
7. Kile, R. L., and Welsh, A. L.: Liquid Oxygen in Dermatologic Practice, Arch. Dermat. & Syph. 57: 57 (Jan.) 1948.

secondary to varicose veins, Raynaud's disease, diabetes transverse myelitis and syringomyelia. Massage is useful for such conditions as alopecia, keloids, contracted scars, scleroderma of the localized and generalized varieties and sometimes is useful in pitted scars after a severe case of acne vulgaris. Physical medicine plays a tremendous role in all branches of medicine and certainly a most important role in dermatology. Were it not for the advances made in physical medicine it would have been impossible for dermatologists to attain the high percentage of good therapeutic results in the management of many recalcitrant dermatoses. Further critical scientific studies will help better to evaluate the use of physical agents in dermatology.

PHYSICAL MEDICINE IN THE TREATMENT OF FRACTURES

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During the decade just elapsed the importance of physical medicine in the treatment of fractures has become increasingly recognized by the rank and file of the medical profession. In the past the attention of the surgeon has been focused primarily on the bone itself, and treatment has been designed to obtain adequate reduction and firm fixation of the bony fragments in order to obtain good union in good position. Often this has been accomplished by the use of heavy casts immobilizing many joints without consideration of the effect on the soft tissues. Such an attitude was unfortunate because the bones are only the supporting framework of the extremities and efficient function is the result of the normal interplay of muscles, tendons and joints under the control of an efficiently functioning nervous system.

The local treatment of a fracture is no longer merely a question of obtaining adequate reduction as shown by roentgenograms, holding that position by splints or traction until the bone is firmly united and then hoping that some degree of usefulness of the member will eventually supervene. It is a complex situation in which treatment of all the other component parts of the extremity is as essential as treatment of the bone itself. This has increased the complexity of the problems associated with treatment of fractures because there are two apparently antagonistic objectives to be attained. The fractured bone ends must be held immobile in constant apposition to aid the progress of union, while at the same time motion must be encouraged in the muscles and joints to aid in the removal of hemorrhage and exudates and to prevent the undesirable sequelae of muscle atrophy, swelling, joint stiffness and circulatory changes. In the solution of these problems physical aids are becoming increasingly important.

MOST COMMON CAUSES OF DISTURBED FUNCTION

The most common causes of disturbed function resulting from fractures are the following: (1) malposition and malunion, (2) nonunion, (3) joint stiffness, (4) muscle atrophy and (5) circulatory disturbances. I will discuss each of these causes individually.

1. *Malposition and Malunion.*—Malposition and malunion cannot be treated successfully by physical medicine. It is absolutely essential that an adequate reduction be obtained by closed methods, if possible, but by open operation if that is necessary. Physical therapy is not a substitute for reduction.

2. *Nonunion.*—Not all the causes of nonunion are well defined. However, there are several well known factors which promote nonunion. Motion at the fracture site tends to promote nonunion by breaking the capillaries which are attempting to grow into the fibrous callus and thus disturbing the blood supply to the part so that nonunion is a result. It is therefore essential that adequate immobilization be maintained at the fracture site. The bone must be held immobile. However, this does not mean that the entire extremity must be immobile. Normal circulation to the part is also important in obtaining good union. Blair [1] has emphasized the importance of alternate hyperemia and ischemia such as is obtained by normal muscle function. Anything which tends to make the circulation to the part more normal will also tend to assist the healing process. This does not mean, however, that the application of heat alone will assist the healing process: if the heat is efficient enough to cause long-continued hyperemia, the result will be a decrease in calcification, since continuous hyperemia causes absorption of calcium from bone. Active use of the part, especially after union has started, tends to make the union more firm.

Stiffness, Muscle Atrophy and Circulatory Disturbances.—Joint stiffness, muscle atrophy and circulatory disturbances may be grouped together in discussion of their causation and treatment.

The injury which accompanies a fracture is not limited to the bony structures. It is obvious that the force causing a fracture is transmitted to the bone through the surrounding soft tissues. It is equally as apparent that trauma to the soft tissue is the inevitable accompaniment of fracture of the bone. This soft tissue injury manifests itself in numerous ways. There may be hemorrhage into muscle, fascia, joint and areolar tissue. That this frequently occurs is evidenced by the usual presence of discoloration and swelling following fracture. The hemorrhage may be limited to a comparatively small hematoma in the region of the fracture or may involve an entire extremity and in some cases may even extend to the trunk. At the same time there is usually a decided swelling which cannot be accounted for by extravasated blood. This apparently is an extravasation of lymph or tissue fluid. The resultant edema may be so pronounced that the normal landmarks of the extremity are totally obscured. Only a few hours are required for this swelling to develop to its fullest extent. Thus the ordinary fracture is complicated by the presence of soft tissue swelling which must be treated in addition to the bone injury.

The removal of this extravasated blood and tissue fluid is accomplished either by absorption into the blood stream or by the organization of its fibrinous components into fibrous tissue which may interfere materially with the function of the extremity. If the circulation to the part is adequate, the major portion of this exudate may be removed in a relatively short time by the natural process of absorption into the venous circulation. If, on the other hand, the circulatory efficiency of the veins and lymphatics is moderately impaired, as is commonly the case after trauma with its resultant muscle spasm and inactivity, organization proceeds at a rapid rate. According to Murray [2] this organization is well started within

Read in a Panel Discussion on Physical Medicine in General Practice before the meeting of the Section on Miscellaneous Topics at the Ninety-ninth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

1. Blair, H. C.: Alternation of Blood Supply as Cause for Normal Calcification of Bone, Surg., Gynec. & Obst. 67:413 (Oct.) 1938.

2. Murray, C. K.: Immediate and Early Physical Therapy in Management, Arch. Phys. Therapy 20:74 (Feb.) 1939; The Exact Role of Physical Therapy in the Treatment of Fractures, Surg., Gynec. & Obst. 58:479 (Feb., no. 2A) 1934; Proper Place of Physical Therapy in the Treatment of Fractures, J. A. M. A. 97:235 (July 25) 1931.

seventy-two hours and by the end of ten to twelve days has progressed to considerable magnitude. He stated: "In the first five to ten days a large proportion of this exudation and infiltration can be removed from the part, before it can undergo organization, by any mechanism which will restore the normal circulatory efficiency of the part." It must be remembered, however, that it is the circulatory efficiency of the venous return that is important in this case. Increase of the arterial circulation alone will result in increased edema and swelling and will therefore be harmful rather than helpful to the removal of tissue exudates. This is the reason that heat should not be used alone in the treatment of fractures but should always be accompanied by massage, elevation or active muscular contraction.

If allowed to progress to completion the organization of blood and tissue fluid culminates in the formation of firm fibrous adhesions which may cause pain, limitation of motion and circulatory impairment. The organization of this fluid into fibrous tissue is concomitant with and analogous to the development of fibrous tissue about the fractured bone ends which results in the formation of bony callus. Therefore it must be treated immediately after the fracture has occurred and not after the fracture has solidified.

Thus the pathologic development may be divided into two stages. The first is the stage of organization in which appropriate treatment may result in removal of the disturbing elements. This stage probably lasts two or three weeks. The second is the stage of scar tissue formation in which fibrous adhesions limit function. Treatment in this stage is slow and laborious and sometimes ends in complete failure. Watson-Jones [3] has aptly said, "edema is glue."

It is my opinion that the greatest single cause of disability in fractures is the presence of persistent swelling during the period of immobilization.

TREATMENT

Treatment for these conditions should be started immediately after the fracture is reduced and immobilized. At first the treatment should be directed mainly toward the removal of hemorrhage and edema. This may be accomplished most efficiently by active exercise. Normal venous return flow circulation from the extremities is accomplished through muscle contraction. By careful choice of the immobilizing apparatus, active motion of some portion of the extremity is usually feasible throughout the period of immobilization. Close fitting, nonpadded plaster casts, trimmed so that motion is possible in all joints except those required to maintain the immobilization, are usually satisfactory in those patients that are ambulatory. Skeletal traction and internal fixation in the more serious cases allow adequate immobilization of the fracture line with *minimum* immobilization of surrounding joints. The great majority of fractures require only active motion for their physical therapy. In a previous study [4] at the Minneapolis General Hospital out of 3,582 cases of fracture, 986, or 27½ per cent, received formal treatment in the physical therapy department. Thus 72½ per cent were treated by active motion alone. Elevation of the affected part is a useful adjunct in removal of swelling. However, it must be remembered that for elevation to be effective, the extremity must be so arranged that there is a continuous downhill slope from the fingers or toes to the body. This means in the upper extremity that the hand must be above the elbow and the elbow above the shoulder. Obviously this is not a practical position unless the patient is in bed. The use of a sling in a Colles fracture, for instance, does not prevent swelling because an uphill grade is still present between the elbow and the shoulder. If adequate activity or elevation or both can be accomplished immediately after the fracture has been reduced the problem of removal of swelling has usually been solved and routine care in the department of physical medicine will be reduced to a minimum. However, in many cases it is impossible or impractical to achieve sufficient activity in this simple manner. It is most important that persistent swelling or inactivity be detected and the decision for treatment be made as early as possible. During the first two weeks after the injury the greatest amount of benefit can be obtained by the least amount of treatment in the shortest time. Delay in starting treatment means a disproportionately greater delay in recovery of function if firm joint adhesions or muscle atrophy or fibrosis is allowed to supervene. Formal treatment is carried out in the following manner:

Heat.—Heat may be introduced by a multitude of methods. Infra-red lamps, carbon filament bulb bakers, hot soaks, hot packs, paraffin baths, whirlpool baths, bathroom heaters, diathermy, shortwave diathermy, electric pads, the sun's rays, and numerous other sources of heat may be used. The physiologic effects of all these types of heat are the same. Their usefulness varies according to their availability and their penetration of tissues. The physiologic effects of heat briefly are: 1. Heat in mild doses as commonly used in the treatment of fractures is sedative. It relieves the pain and muscle spasm associated with injuries. 2. It increases circulation. This is most pronounced on the arterial circulation. The capillary pressure is greatly enhanced. 3. An increase in swelling results as a consequence of the greater infiltration incident on the higher capillary pressure.

Here then are two desirable effects, relief of pain and increased circulation, and one undesirable effect, increased swelling. If treatment is left at this stage, the pain will return and the circulation again decrease when the effect of the heat has subsided. But the greater swelling will often remain. Too frequently the patient is instructed to soak his fractured extremity in hot water after the cast has been removed without adequate instruction as to the use of massage and exercise following the heat. Under these circumstances if the heat used is effective the patient is just as likely to obtain decreased motion as he is to obtain increased motion.

The advisability of diathermy and shortwave diathermy in the early treatment of fractures is subject to serious question because they are the most efficient methods of applying heat and therefore may cause enough swelling to be harmful.

Massage.—The physiologic effects of massage vary with the type and dosage employed. However, as used in the early treatment of fractures (superficial stroking) the effects are: (1) sedation and relief of pain and muscle spasm; (2) increase of circulation, this time the greatest effect is on the venous side of the circle so that return flow is facilitated both reflexly and mechanically; (3) subsequent decrease of swelling because of the increased venous circulation.

All of these effects are desirable ones and are easily obtainable in skilled and gentle hands. It is dangerous to entrust the early physical therapy of fractures to most masseurs and athletic room rubbers. They are usually big burly men or women who pride themselves on their

3. Watson-Jones R.: Fractures and Joint Injuries, Baltimore, Williams & Wilkins Company, 1944.
4. Knapp, M. E.: Role of Physical Therapy in Fractures, Arch. Phys. Therapy 21: 401-407 (July) 1940.

strength and who firmly believe that massage is not useful unless it hurts. As a matter of fact any treatment given in the early stage of fracture management must be not only free from pain but must relieve pain to be effective, because muscle spasm must be overcome. In addition rough treatment is likely to cause redisplacement of fragments. The objections to massage advanced by such authors as Watson-Jones[2] and Boehler[5] are apparently based on such experiences. The dosage of massage must be exactly controlled and capabilities of the patient must be kept constantly in mind. In my experience massage in the home carried out by the patient or his relatives or friends has been not only woefully inadequate but often definitely harmful, so that I not only do not prescribe home massage, but also strongly discourage it when suggested by others.

Exercise.—Heat and massage as discussed in the preceding paragraphs are only preparatory to the most important procedure in the physical therapy of fractures, the controlled use of motion. Exercise is usually classified as passive and active. Passive exercise may be subdivided into relaxed motion and forced motion. Active exercise is subdivided into assisted, free and resisted active exercise.

In the early treatment of fractures the use of passive motion is not practical. Theoretically, relaxed passive motion could be used, and it is frequently ordered by surgeons who do not have a close connection with the physical therapy department in which the treatment is given. However, in practice, relaxed motion is rarely obtained early in fractures because of the fear of the patient who voluntarily or involuntarily contracts his muscles in anticipation of the motion to follow. Thus the passive motion is converted into resisted motion with the patient doing the resisting. Under these conditions displacement of the fragments is to be expected.

Active exercise is the practical method in early fractures. If adequate immobilization can be obtained by tight-fitting plaster casts or internal fixation, free active or even resisted active motion may be used especially by the performance of ordinary daily tasks that do not require great strength or heavy lifting. When it is desired to move joints in close proximity to the fracture line, assisted active motion should be used. The technician supports the part to eliminate gravity and the patient carries out the motion within the limits of pain. Under these conditions the patient will stop the motion at the earliest sign of pain and there is little danger of disturbing the fragments. Only the range of motion that is possible without pain is allowable.

The physiologic effects of active exercise are: (1) hypertrophy of muscle fibers; (2.) increased circulation, both arterial and venous; (3.) decreased swelling, and (4.) increase of strength and nutrition.

Wherever voluntary active motion may be impractical or impossible, as in nerve injuries, the use of electrical stimulation will help to prevent muscle atrophy and circulatory dysfunction. The faradic current may be used if the nerve is intact, but the interrupted galvanic or sinusoidal current must be used if the nerve is severed and the nerve endings are degenerated.

Active motion of all joints not necessarily immobilized must be insisted on between treatments throughout the course of fixation if muscle atrophy and fibrosis are to be prevented and limitation of motion is to be kept at a minimum.

General Treatment.—Since the advent of World War II increasing stress has been laid on the fact that the recovery of an injured patient depends not only on the recovery of the local injury but also on the maintenance of activity throughout the patient's body. This type of physical therapy or rehabilitation is started as early as practical, preferably immediately after the fracture has been reduced, and consists primarily of exercises designed to maintain activity, muscle tonus and muscle power in those parts of the body not concerned with the immediate injury. Exercises have been designed for all portions of the body and are performed in the service hospitals under the direction of physical education specialists. The exercises are carried out preferably in groups so that a number of men are doing the same thing at the same time. This produces a sense of competition as well as rhythm, which makes the exercises more enjoyable. Even the most severely injured patient can move some muscle, though it may be only his eyelids. The Army Air Forces have prepared several useful booklets to aid the injured soldier in recovering from his mental as well as his physical disability. These pamphlets present the problem in an interesting manner and provide charts by which the patient can follow his progress from day to day. They seem to be well adapted to the rehabilitation of large groups of injured persons who have similar backgrounds or ambitions as is the case in the armed services. These rehabilitation exercises are important, not only for the physical effects produced but also for the psychologic effects. They tend to keep the patient cognizant of the fact that he is not totally disabled, that he can carry out motions which are useful and that he will be allowed to carry on useful activities as soon as that is possible. Thus there is a logical progression of these rehabilitation exercises to the more specific types of occupational therapy which are of value in the healing stages.

OCCUPATIONAL THERAPY

Occupational therapy is so closely linked to physical therapy that there can be no absolute dividing line between them. This has become more obvious in recent years, so that the present designation of physical medicine includes both physical and occupational therapy plus the diagnostic procedures necessary for the intelligent use of both. Occupational therapy is the logical link between physical therapy and return to ordinary working conditions. It naturally divides itself into the recreational and vocational types. Occupational therapy was started as an attempt to divert the patient's mind while he was forced to remain in bed and relatively inactive. Basket weaving, knitting, sewing, leather working and artistic pursuits were suitable for this purpose. Later the adaptation of occupational devices to the treatment of involved portions of the body was employed. Special technics were used to strengthen muscles and mobilize joints by attaching grips to looms and using treadle-powered lathes and saws with devices to enable the patient to use the desired muscles and joints.

Carpentry is most adaptable to this type of treatment, so that most occupational therapy departments include well equipped carpentry shops. Here the ordinary use of tools with which most men are familiar is modified to allow treatment of special muscles or to aid in the mobilization of joints. If a patient's fingers are stiffened it may be necessary to build up the handles of the tools to allow him to grip them firmly. Screw drivers aid in restoring pronation and supination. Hammers aid flexion and extension of the wrist, and saws aid flexion

5. Boehler, L.: The Treatment of Fractures, Baltimore, William Wood and Company, 1935.

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and extension of the elbow and shoulder. Leg and foot motions are obtained by using bicycle type foot power or treadle power machines with adaptations to fit the disability of the individual patient. Looms for weaving various materials have shuttles and controls which are adjustable to the patient's disabilities. Tinsmithing, lathe work, sewing, clay modeling and similar occupations are used in the same way. These methods have accomplished their purposes fairly well but have had no connection with the patient's previous occupation or future capabilities. Many of the methods are not acceptable to men because they do not consider them to be masculine occupations.

Vocational occupational therapy is a considered attempt to have the patient use therapeutically the motions which are employed in his ordinary occupation, or if that is impossible because of severe injury, to teach him another occupation in which those movements may be useful. Typical examples are the clinic of the Workmen's Compensation Board in Toronto under the direction of Dr. Harold Storms and the rehabilitation clinic of the Liberty Mutual Insurance Company in Boston. At such centers the patient is put to doing his usual work with adaptations to benefit his disability. He is not discharged until he is able to perform work useful from an economic point of view. For instance, a bricklayer is put to work laying bricks. At first he may only pick them up to move them from place to place. The movements are gradually increased in number and complexity until he is able to lay bricks fast enough to make him available for useful employment. It is not difficult to get him to return to work when he knows that he is able to do a full day's labor. A laborer may be put to work shoveling gravel. The same principles are used in other occupations.

Storms [6] has listed the following principles:

1. Therapy should not be fixed or inviolate but in a constant state of change, ready to absorb new forms or modifications of old to suit an ever new set of conditions.

2. Therapy should be aimed not only at an increased range of movement in stiff joints, abolition of pain and reeducation of muscles, but also at an increase in muscle power to that needed by the workman when he renews his employment.

3. The injured workman is not a mental patient. He is keen to get back to work and what is necessary is to build up muscle strength and limber the joints. While there are occasional cases of loss of morale or even of malingering, these are in the minority and are handled by the therapists in their stride.

4. The best form of work therapy is exercise with the tools to which the patient is accustomed. This has a three-fold advantage: 1. The patient does not have to learn a new technic. 2. The proper muscle groups are exercised. 3. The patient is able himself to note his progress and to help decide on his fitness for work.

5. There should be a physical therapy and an occupational therapy department, with cooperation between the aides of the two departments.

Griffiths has advanced the same ideas in his observations on the conditioned reflexes of industry which are so complex that the use of the workman's own tools is required for the best results.

While recreational therapy is useful when the patient is in bed and has a limited usefulness during early convalescence, vocational methods appear to be much more valuable when the patient is in the later convalescent stages. The tendency at the present time is to emphasize the vocational methods and to deemphasize recreational occupational therapy.

6. Storms, H. D.: Rehabilitation of Convalescent Industrial Casualties with Physical Medicine, Arch. Phys. Therapy 25: 469 (Aug.) 1944.

SUMMARY

Physical medicine is not a substitute for reduction in fractures. Treatment must be started early, that is, during the period of immobilization, for best results. Persistent swelling is the most frequent cause of disability following fractures. Active motion is the most effective treatment for this swelling. Physical therapy and occupational therapy should be combined for the most effective therapy for postfracture disabilities.

PANEL DISCUSSION

TILTED PELVIS

QUESTION: In our town we have an active osteopathic society with a roentgenologist, and there is a consequent thought prevalent that patients have a "tilted pelvis." My question is, in your opinion how frequent is the condition of a "tilted pelvis" and how often is it the cause of backache?

DR. OBER: Seventy-five per cent of the old lame backs that I have seen in the last year, some of them existing as much as twenty-five years, are due to tilted pelvis; it is common, and it is due usually to a short leg or an inequality between the ilium and the femur. A lift under the heel until the patient's spine is leveled will cure most lame backs. I received $5,000 from a gentleman once who had spent thousands of dollars on his back. He said, "Never mind. Common sense is worth a lot of money."

PHYSICAL MEDICINE IN OSTEOARTHRITIS

QUESTION: Is physical medicine as useful in osteoarthritis as it is in rheumatoid arthritis? Should exercise be stressed in the treatment of osteoarthritis?

DR. SOLOMON: Physical therapy is used for all forms of arthritis. Time did not permit differentiating the various forms. I stress this matter of the exercises for the patient with rheumatoid arthritis because it seems to be more important. There is this difference, though: In rheumatoid arthritis and in osteoarthritis the pathologic changes are different. In osteoarthritis or hypertrophic arthritis, there is no danger of deformity or contours. Most of the patients will benefit from the ordinary exercises which they get themselves. Sometimes I will tell these persons to rest their knee or their back, and they will be helped. Some of these patients are inclined to want to exercise a great deal because they believe it will prevent stiffness. Patients with hyperthrophic arthritis are cautioned particularly in that regard.

QUESTION: Is galvanic current indicated to reduce swelling with severe ichthyosis?

DR. CIPOLLARO: I have never used it. I think maybe you can answer that question, Dr. Krusen.

DR. KRUSEN: I do not believe that it is.

DR. KNAPP: In my opinion, that is not a useful method.

DR. SOLOMON: I certainly agree with what you say, Dr. Krusen. I think there are simpler methods to do it, and why go to that difficulty?

HERNIATION OF INTRAVERTEBRAL DISK

QUESTION: How often is pain in the back due to herniation of the intervertebral disk?

DR. OBER: Not very often. The Greek literature would lead one to think that every backache was due to a ruptured disk. If that is so, then every headache is due to a brain tumor. The point is that the neurologist sees these patients, and he says that the pain is all due to ruptured disks. As a matter of fact, there are millions of patients with lame backs who get well without any treatment, and there are others who get well with treatment by their own family physician. Then when the family physician does not succeed, they go to the orthopedic surgeon, and he cures most of those persons. The few that are left have herniated disks. I would say that about one hundredth of 1 per cent of all lame backs might come in the disk syndrome.

SUCTION-PRESSURE FOR PERIPHERAL VASCULAR DISEASE

QUESTION: What has been your experience as to the value of the suction-pressure apparatus in peripheral arterial obstruction?

DR. MCCLELLAN: I believe that the suction-pressure apparatus has little place today in the treatment of peripheral vascular disease. There may be a few isolated cases in which the obstruction is sufficient to warrant its use. I think that if one

watches the clinics where this has been in use, one will find most of the apparatuses are covered with dust and are in the storeroom.

DR. OBER: In the March 1 number of THE JOURNAL is a small article on histidine (Wirtschafter, Z. T., and Widmann, R.: Elaboration of Histamine in Vivo, J. A. M. A. 133:604 (March 1) 1947). There has been a remarkable result from the use of histidine and the use of large doses of ascorbic acid in getting rid of gangrene of the lower extremities due to arterial occlusion. It is probably useful in Bürger's disease and other similar diseases.

DIATHERMY IN PRESENCE OF METALLIC INTERNAL FIXATION

QUESTION: Is diathermy contraindicated in the presence of metallic internal fixation?

DR. KNAPP: That question is one which always comes up. In my opinion, diathermy is not contraindicated in the presence of metallic internal fixation, for this reason: If metal is on the skin surface there is a great difference in conductivity between the metal and the air and the skin, so the greater part of the energy is warped into the metal and burns may occur. When that metal is buried in a liquid, which is a conductor also, then the difference is not great in conductivity, so that there is not a warping of the field into the metal. Associates and I have used diathermy many times with metal which is entirely within the body, and we have never seen any harm from it.

EXERCISE FOR BACKACHE DUE TO OSTEOARTHRITIS

QUESTION: Is osteoarthritis a contraindication to the use of exercise when the backache is attributed to this cause?

DR. OBER: The exercise should never be used when the back is painful. There are many persons who have spurs ½ inch (1.3 cm.) long, some of them looking like ice tongs, who never had a lame back in their lives. So, these patients' lame backs are really not due to the osteoarthritis; they are due to their disturbed physiology, because they get over their lame backs. The time for exercise in lame backs is the time between attacks. Get the muscles restored so that another attack is avoided. It is all very well to treat lame backs as soon as the pain disappears and to get the patients going, but that does not accomplish anything, because they go out and hurt their backs again. However, arthritis is no contraindication for exercise.

GRADED EXERCISES FOR CHRONIC MYOCARDITIS

QUESTION: Will you please discuss graded exercises for chronic myocarditis?

DR. MCCLELLAN: Graded exercises from the flat walk to a mild degree of incline have a distinct place for these patients. Graded exercises, however, should be controlled definitely by clinical observation of the patient, the response of his heart to this exercise from his pulse rate and other indications. They should be limited in distance, and they should be increased gradually as the patient's ability to perform the exercises increases.

MANIPULATION FOR BACKACHE

QUESTION: Do you consider manipulation of any value in treatment of backache?

DR. OBER: I manipulated one back once, and I swore that I would never do another. All that the osteopath does is to stretch out the muscle, and there are other ways of doing it. He never cures anything. I never manipulate a lame back.

SACROILIAC STRAIN

QUESTION: What is the underlying mechanism of the so-called acute sacroiliac strain?

DR. OBER: That has been overrated. Sacroiliac strain has practically gone out the window. Usually sacroiliac strain occurs in fat people who have large abdomens or some twist. Most sacroiliac strains come from severe injuries. They are uncommon. They are seen after pregnancy when the pelvis has not retracted, by the shortening of the ligaments after the change in the hormone content of the mother.

MECHANICAL STRETCHING FOR CONTRACTURE OF FASCIA LATA

QUESTION: Do you think mechanical stretching can replace surgical sectioning of the fascia lata in backache due to contracture of the fascia lata?

DR. OBER: In most instances, yes. Rarely is it necessary to divide the fascia lata, and I do not do it nearly so often as some of my colleagues.

NAUHEIM BATHS FOR HYPERTENSION

QUESTION: Is chronic hypertension a contraindication to the use of Nauheim baths?

DR. MCCLELLAN: No. It is not a contraindication. The use of the Nauheim bath for that group is of value in the general influence on the body as a whole, in steadying and reducing nervous tension, which is certainly one of the major factors in many cases of hypertension. The Nauheim bath is indicated for the patient with severe hypertension who has disability and is perhaps confined to bed because of it. As I said, in the milder essential hypertensions something can be accomplished by its use.

DANGERS OF EPILATION

QUESTION: What are the dangers of epilation? Should patients be sent to beauty specialists for removal of superfluous hairs?

DR. CIPOLLARO: Unfortunately, in many communities there are no dermatologists who can do this work adequately. There are no objections to having a lay person do the work, provided that he has been properly trained and provided that he works under the supervision of a physician. In communities where there are adequate dermatologic facilities those patients should be referred to the dermatologist for treatment.

DIATHERMY FOR FRACTURES

QUESTION: Is diathermy contraindicated in the after-treatment of fractures?

DR. KNAPP: I feel that diathermy is contraindicated in the early treatment of fractures. That is, diathermy is the most efficient method of producing heat and therefore is also the most efficient method of producing hyperemia. At least that is what is believed at the present time. It is more likely to cause decalcification than calcification. So, I restrict the use of diathermy until after union has occurred so that nonunion will not be caused by the use of diathermy.

HISTAMINE PHOSPHATE ION TRANSFER

QUESTION: Describe your technic of using histamine phosphate ion transfer.

DR. OBER: A small battery is furnished for that purpose. It has a little resistance coil in it. The handle is held in the patient's hand, which is covered with a wet cloth. The wet cloth is placed over the electrode, and this is placed on the back in the region of the muscle spasm. Then it is left on for about three minutes. It covers the whole area of muscle spasm perhaps in two or three or four applications. There is produced a hyperemia that looks like the hives. Some persons are sensitive to histamine, and occasionally a severe attack of hives occurs that may last for several weeks. So, one must be sure that the patient is not allergic nor has allergic manifestation of other sorts. If he has, one should not use the histamine locally.

REST IN MANAGEMENT OF RHEUMATIC ARTHRITIS

QUESTION: Please discuss the place of rest in the management of rheumatic arthritis.

DR. SOLOMON: Many persons ask whether one should put one's patients to bed. As I said, I do not. That might be the easiest way to answer that. I think rest certainly is indicated for these persons, but rest may be given along with exercises. They can rest for an hour in the morning and again for an hour in the afternoon. They can rest even more times during the day. But to tell a patient definitely to go to bed I think does him more harm than good.

Veterans.—One of every 10 persons in the United States is a veteran of World War II; about 2 of every 3 men between the ages of 20 and 35 are World War II veterans. By 1952, veterans and their families will number an estimated 62,300,000—or 43 per cent of the nation's population. There were more than 109,000 patients hospitalized by the Veterans Administration on March 1.—Veterans Administration Information Service, April 22, 1948.

RADICAL RESECTION OF HEAD OF PANCREAS AND TOTAL PANCREATECTOMY

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Exactly fifty years ago the first recorded successful attempt was made to remove a carcinoma of the ampulla of Vater by radical resection. After this operation by Halsted [1] only sporadic attempts at radical resection were made, most of them being unsuccessful. Then, in 1935, Whipple, Parsons and Mullins [2] devised a technic for operation in two stages which could be undertaken as a curative and not a palliative measure. The advent of vitamin K permitted one stage radical resection to be executed with less risk than had accompanied certain palliative procedures before this means of correction of deficiency of prothrombin was available. The important observations made by Dragstedt [3] concerning the physiology of the pancreas and the surgical accomplishments of Brunschwig,[4] Crile,[5] Trimble and his associates,[6] Hunt,[7] Pearse,[8] Cattell,[9] Orr [10] and others soon gave the members of the profession confidence in the procedure.

These contributions so stimulated the members of the surgical profession that with each ensuing year there have appeased more numerous reports of successful radical resection of the pancreas and duodenum, not only for malignant disease of the ampulla of Vater, head of the pancreas, duodenum and stomach, but also for benign conditions such as pancreatitis and tumor of the islands of Langerhans.

It would seem that the time is near when an attempt should be made to evaluate the results. It is hoped that this analysis will stimulate other surgeons with a considerable experience to review similar operations performed by them, so that from the combined experience of all it can be determined when these formidable resections should or should not be undertaken.

SURVEY OF CASES AT MAYO CLINIC

In the following review are included all cases in which radical resection of the head of the pancreas and the duodenum was attempted at the Mayo Clinic up to Jan. 1, 1947 (table 1). In all, 49 patients underwent a modified Whipple operation. There were 13 deaths in the hospital, or an operative mortality rate of 26 per cent. Six patients underwent total pancreatectomy [11] 1 died. Forty-three underwent radical resection of the head of the pancreas and the duodenum; 12 of them died in the hospital, an operative mortality rate of 28 per cent.

TABLE 1.—*Radical Partial and Total Pancreatectomy for Benign and Malignant Disease: All Cases at Mayo Clinic to Jan. 1, 1947*

Operation	Patients	Hospital Deaths	
		Number	Percentage
Excision of head of pancreas and duodenum	43	12	28
Total pancreatectomy	6	1	17
Total	49	13	26

A likely explanation for the lower mortality rate which accompanies total pancreatectomy is that (1) removal of the body and tail of the pancreas and the spleen adds little to the procedure of removal of the head of the pancreas and the duodenum, and (2) because the entire pancreas is excised, any leakage or fistula from the pancreatic stump is obviated. This does not indicate, however, that total pancreatectomy should be performed in preference to partial pancreatectomy when the latter will eradicate the disease, since the metabolic derangements which will follow total excision may outweigh any possible advantages of the more radical operation.

TABLE 2.—*Radical Excision of Head of Pancreas and Total Pancreatectomy for Benign Disease*

Condition	Operation	Patients	Hospital Deaths	
			Number	Percentage
Islet cell tumor of head of pancreas	Total pancreatectomy	3	1	33.3
Chronic pancreatitis with exhibition and intractable pain	Total pancreatectomy	2	0	0
	Excision of head of pancreas and duodenum	6	4	66.7
		8	4	50
Total operations for benign lesions		11	5	45

Although only 11 patients have been operated on for benign disease of the pancreas, it is interesting to note (table 2) that the operative mortality rate for such an operation is more than twice that of pancreatectomy done for malignant disease (table 3). This is probably due to the greater technical difficulties that may arise when the surgeon is confronted with an inflammatory process that frequently becomes adherent to the superior mesenteric vein and may result in gross operative hemorrhage, such as happened in 2 instances among the 8 persons operated on for chronic pancreatitis. The other 2 deaths resulted from peritonitis and massive pulmonary embolism, respectively. The fact that there were no deaths in the hospital after total pancreatectomy for chronic pancreatitis would bear out the point that it is exceedingly important to defer resection of a part or all of the pancreas for inflammatory conditions until the process is in the chronic end stage of calcification —as it was in all the successful resections—and not

From the Division of Surgery, Mayo Clinic.
Read before the Section on Surgery, General and Abdominal, at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

1. Halsted, W. S.: Contributions to the Surgery of the Bile Passages, Especially of the Common Bile-Duct, Boston M. & S. J. 141: 645-654 (Dec. 28) 1899.

2. Whipple, A. O.; Parsons, W. B., and Mullins, C. R.: Treatment of Carcinoma of the Ampulla of Vater, Ann. Surg. 102: 763-776 (Oct.) 1935.

3. Dragstedt, L. R.: Some Physiologic Problems in Surgery of the Pancreas, Ann. Surg. 118: 576-589 (Oct.) 1943; The Present Status of Lipocaic, J. A. M. A. 114: 29-32 (Jan. 4) 1940.

4. Brunschwig, A.: Resection of Head of Pancreas and Duodenum for Carcinoma—Pancreatoduodenectomy, Surg., Gynec. & Obst. 65: 681-684 (Nov.) 1937.

5. Crile, G., Jr.: Successful Resection of the Head of the Pancreas for Carcinoma, Cleveland Clin. Quart., 5: 250-258 (Oct.) 1938.

6. Trimble, I. R.; Parsons, J. W., and Sherman, C. P.: A One Stage Operation for the Cure of Carcinoma of the Ampulla of Vater and of the Head of the Pancreas, Surg., Gynec. & Obst. 73: 711-722 (Nov.) 1941.

7. Hunt, V. C.: Surgical Management of Carcinoma of the Ampulla of Vater and of the Periampullary Portion of the Duodenum, Ann. Surg. 114: 570-601 (Oct.) 1941.

8. Pearse, H. E.: A Simplified Anastomosis for Resection of the Duodenum and Head of the Pancreas, Surg., Gynec. & Obst. 75: 333-336 (Sept.) 1942.

9. Cattell, R. B.: Pancreatoduodenal Resection: Preliminary Report of Eighteen Cases, New England J. Med. 228: 521-526 (May 10) 1945.

10. Orr, T. G.: Resection of Duodenum and Head of Pancreas for Carcinoma of the Ampulla, Surg., Gynec. & Obst. 73: 240-243 (Aug.) 1941.

11. Waugh, J. M.; Dixon, C. F.; Clagett, O. T.; Bollman, J. L.; Sprague, H. G., and Comfort, M. W.: Total Pancreatectomy: A Symposium Presenting Four Successful Cases and a Report on Metabolic Observations, Proc. Staff Meet., Mayo Clin. 21: 25-46 (Jan. 23) 1946.

to attempt pancreatectomy in the face of subacute inflammation.

INDICATIONS FOR PANCREATECTOMY

Naturally, all conservative measures, such as prolonged drainage of the common bile duct either by insertion of a T tube or by choledochoduodenostomy, should be tried before resection is attempted. If these measures fail and the process of calcification is limited to the head of the pancreas and the pain is intractable, resection of the head of the pancreas should be undertaken. If, however, the calcification involves the entire pancreas, the pain remains intractable and there are associated diabetes and insufficiency of the external secretion, then total pancreatectomy is advisable. Already there are encouraging reports of relief obtained for patients with this type of pancreatitis by performance of thoracicolumbar sympathectomy alone or this type of operation associated with vagotomy. It is hoped that the late results will be satisfactory, since such procedures can be done with only a fraction of the risk of pancreatectomy.

Occasionally, total pancreatectomy will be necessary for islet cell tumor. Total pancreatectomy has been performed three times at the Mayo Clinic among a total of 46 patients in whom islet cell tumors were found at surgical exploration during the past twenty years (table 2).

Before a patient undergoes total pancreatectomy for islet cell tumor of the head of the pancreas, it is imperative to determine (1) that the patient's symptoms are due to spontaneous hypoglycemia, (2) that the tumor is not situated in the tail or body of the pancreas, where about 80 per cent of such tumors are found, or in an accessory pancreas, (3) that if the tumor is situated in the head, local excision with preservation of the pancreas is not possible or that resection of the head of the pancreas, which would obviate diabetes and deficiency of external pancreatic secretion, is not possible and (4) that the symptoms and disability produced by the tumor outweigh the magnitude of the operation and the disturbance in metabolism which follows it.

If, after careful surgical exploration, a tumor is not palpable, it is usually advisable for the surgeon to resect the tail and body of the organ and, if on immediate careful examination of this specimen by the pathologist no tumor is found, the surgeon ought then to proceed with removal of the head of the pancreas.

DATA ON OPERATION FOR MALIGNANT LESIONS

A total of 38 patients underwent operation for malignant processes (table 3). For 37 of these radical resection of the head of the pancreas and the duodenum was performed, and for 1 patient total pancreatectomy was done. There were 8 deaths in the hospital, an operative mortality rate of 21 per cent. Among those patients who had malignant lesions, 19 had carcinoma of the head of the pancreas, 16 had carcinoma of the ampulla or papilla, 2 had carcinoma of the duodenum and 1 had extension of the malignant process into the head of the pancreas from a primary carcinoma of the stomach. It is pertinent and significant that 15 patients underwent operation in one stage for carcinoma of the head of the pancreas, with an operative mortality rate of 13 per cent. This figure is near that for palliative operations at the present time. The operative mortality rate for lesions of the ampulla of Vater was 23 per cent in the case of 13 patients who underwent a one stage operation. This is appreciably higher than the operative mortality rate among those who had carcinoma of the head of the pancreas. Actually, there should not be this difference in risk, and as the series becomes larger the discrepancy between the operative risk of lesions of the ampulla and that of lesions of the head of the pancreas will become less.

TABLE 3.—*Radical Partial Pancreatectomy for Carcinoma: Operative Mortality**

Site of Lesion	Operation in	Hospital Deaths: Patients		Number		Percentage	
Head of pancreas	One stage	15		2		13	
	Two stages	1		1		25	
		—	19	—	3	—	16
Ampulla or papilla of Vater	One stage	13		3		23	
	Two stages	3		1		33	
		—	16	—	4	—	25
Duodenum and stomach	One stage	3		1		34	
Total		38		8		21	

* Thirty-seven patients underwent radical excision of head of pancreas; 1 patient underwent total pancreatectomy.

FOLLOW-UP STUDY ON THIRTY PATIENTS

For the purpose of evaluation of survival beyond the immediate postoperative period, the group of 30 patients who had had a malignant lesion as reported by Clagett and me,[12] and all operated on prior to Jan. 1, 1946, were examined or reached by letter by March 1, 1947.

In table 4 is a total of 24 patients who survived operation; 15 had died in the interim from recurrence, and 9 were living without definite evidence of carcinoma at the time the inquiry was made. The survival rate among those patients who had had carcinoma of the head of the pancreas is discouraging, for 11 of the 14 surviving the operation already had succumbed at the time of inquiry. The average length of palliation for this group was 8.4 months (table 5). It is doubtful that palliation of greater duration was obtained from radical resection than might have been expected from cholecystogastrostomy or cholecystojejunostomy. The 3 patients still alive at the time of this inquiry had lived, on the average, eighteen months (table 6), and 2 of them had had involvement of lymph nodes. This is heartening, for at present radical resection offers the only hope of cure for these unfortunate patients, and because of the location of the pancreas the most radical type of resection possible is at most, so far as the node-bearing area is concerned, local excision.

TABLE 4.—*Survival of Patients, After Radical Partial Pancreatectomy for Carcinoma, Operated on Prior to Jan. 1, 1946**

Site of Carcinoma	Patients	Post-Operative Deaths	Patients Surviving Operation	Deaths Due to Recurrence†	Patients Living
Head of pancreas	16	2	14	11	3
Ampulla of Vater	11	3	8	3	5
Duodenum	2	1	1	0	1
Stomach	1	0	1	1	0
Total	30	6	24	15	9

* All thirty patients were traced.
† All deaths after dismissal were considered to be due to recurrence.

The survival rate of patients after resection for carcinoma of the ampulla of Vater is, as might be expected, immeasurably better than that after resection for carcinoma of the head of the pancreas. Of 8 surviving operation for the former lesion, 3 succumbed because of recurrence (table 4) and 5 had been alive for an

12. Waugh, J. M., and Clagett, O. T.: Resection of the Duodenum and Head of the Pancreas for Carcinoma: An Analysis of Thirty Cases, Surgery 20: 224-232 (Aug.) 1946.

average of twenty-eight months at the time of this report (table 6). One of these was alive and well three years after operation. Those who obtained only palliation survived an average of thirteen months (table 5). It would appear that some of the patients who had carcinoma of the ampulla will secure permanent cure.

Although the results thus far recorded for the group

TABLE 5.—*Survival Period of Those Patients Who Obtained only Palliation**

Site of Carcinoma	Patients	Postoperative Survival Period, Months				Average Survival Months
		1-5	6-11	12-17	18-24	
Head of pancreas	11	3	6	1	1	8.4
Ampulla of Vater	3	1	..	1	1	13
Stomach	1	1	..	..	..	4
Total	15	5	6	2	2	9

* All patients were operated on prior to Jan. 1, 1946.

TABLE 6.—*Survival Period of Those Patients Alive in March 1947, Without Evidence of Recurrence*

Site of Carcinoma	Patients	Months After Operation				Average Survival, Months
		12-17	18-23	24-29	30-36	
Head of pancreas	3	1	2	..	..	19
Ampulla of Vater	5	1	..	1	3	28
Duodenum	1	..	1	..	..	22
Total	9	2	3	1	3	24

with carcinoma of the head of the pancreas are discouraging, there is no other procedure which offers any hope of cure; hence, I feel that radical resection is justifiable and indicated for carcinoma arising in the ampulla of Vater or head of the pancreas. Furthermore, at the time of operation the surgeon may not be able to determine whether the lesion arises in the ampulla of Vater, head of the pancreas or duodenum. Even after resection, the pathologist may have difficulty in establishing the origin of the lesion.

It is obvious, then, that to give every patient his rightful opportunity for cure rather than only palliation, the surgeon will of necessity resect every lesion possible, hoping that it will prove to be a lesion of the ampulla of Vater. Naturally, the earlier in the course of the disease these patients are operated on, the better the chance of cure will be.

Jaundice should be considered an indication for surgical exploration unless incontrovertible evidence is at hand to justify medical management. The fact that the jaundice disappears spontaneously or is intermittent or mild is no sign that it is of benign origin. Several patients in our series had intermittent jaundice in the presence of carcinoma of the ampulla of Vater, and in 1 instance recently jaundice had entirely resolved after its first appearance.

The Whipple procedure, or a modification of it, also provides a curative operation for primary carcinoma of the duodenum. One patient who survived this operation in the present series was alive, well and active twenty-two months postoperatively (table 6).

So far as the mortality rate is concerned, the one stage operation in our experience has produced a lower figure (table 3). Most patients will present themselves in reasonably good condition, so that with the accepted preoperative preparation the single stage operation certainly will be associated with no increased hazard. The one stage procedure has the advantages of eradication of the malignant process at an earlier date, and the patient is spared the discomfort and expense of two major operative procedures. The single operation also usually permits an easier and more rapidly executed resection. Certain patients, however, are in such poor condition when they come for treatment that performance of a two stage procedure is obligatory. By careful preoperative analysis the condition of such patients, as

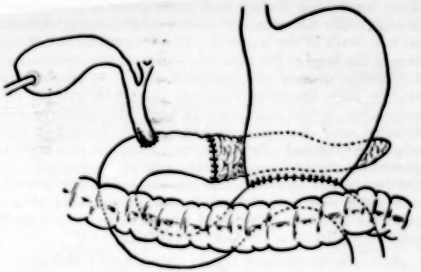

Fig. 1.—Technic for restoration of continuity of the gastrointestinal tract, biliary and pancreatic ducts after resection of the duodenum and head of pancreas (end to end pancreaticojejunostomy, end to side choledochojejunostomy, end to side postcolic, antiperistaltic gastrojejunostomy). (From Waugh.[13])

a rule, can be determined with little difficulty.

In an analysis [12] of the first 30 cases of radical resection of the head of the pancreas and duodenum at the Mayo Clinic, various methods of drainage of the biliary and pancreatic ducts and restoration of gastrointestinal continuity were compared. Conclusions were reached which it has not been necessary to change with further experience. Performance of end to end pancreaticojejunostomy, end to side choledochojejunostomy and end to side, postcolic, antiperistaltic gastrojejunostomy has proved to be satisfactory and seems physiologically and anatomically sound (fig. 1). This technic more or

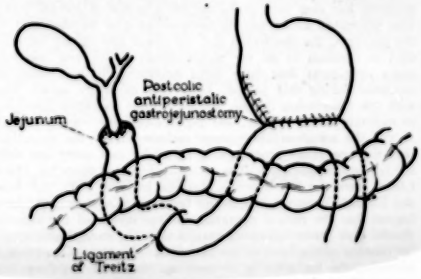

Fig. 2.—Technic for restoration of continuity of the gastrointestinal tract and biliary ducts after total pancreatectomy (end to end choledochojejunostomy, end to side postcolic, antiperistaltic gastrojejunostomy).

less isolates the biliary and pancreatic systems, so that food and the gastric secretions are shunted distally. This isolation may prevent cholangitis. Furthermore, if a malignant lesion should recur, it would not be likely to obstruct the gastroenteric stoma.[13] The technic of

13. Waugh, J. M.: Resection of the Head of the Pancreas and Duodenum: Operative Technic, S. Clin. North America 26: 941-948 (Aug.) 1946.

total pancreatectomy, as far as revision of the gastrointestinal tract is concerned, is the same, but end to end choledochojejunostomy is utilized since no pancreatic stump remains which requires drainage into the jejunum (fig. 2)

SUMMARY

Radical resection of the head of the pancreas and of the duodenum had been done forty-nine times at the Mayo Clinic up to Jan. 1, 1947. Eleven operations were for benign disease and thirty-eight for malignant lesions. Six patients underwent total pancreatectomy, with 1 death in the hospital. The indications for resection of the head of the pancreas and total pancreatectomy for benign disease are discussed, and it is emphasized that in such instances resection should be carried out only after careful evaluation of both the operative risk entailed and the disturbances in metabolism which might be expected. Resection for carcinoma was accompanied by an operative mortality rate of 21 per cent. In the future this figure should become lower, for already one stage resection for carcinoma of the head of the pancreas has been performed fifteen times with a hospital mortality rate of only 13 per cent.

A follow-up study of the 30 patients who had undergone resection for malignant processes prior to Jan. 1, 1946, and had survived operation, showed that 3 of 14 who had had carcinoma of the head of the pancreas and 5 of 8 who had had carcinoma of the ampulla of Vater were still alive, averaging 2 years after operation. When it is considered that, other than surgical treatment, there is no therapeutic measure available which gives these patients any chance for cure, one should constantly strive to lower the operative mortality rate for the procedure and improve diagnostic acumen, so that resection can be carried out more often while the carcinoma is still in a curative stage.

ABSTRACT OF DISCUSSION

DR. ALLEN O. WHIPPLE, New York: Radical surgical treatment of otherwise fatal cancer of the ampullary area and of the pancreas has now been going on for a period of twelve years. The procedure based on the removal en bloc of the head of the pancreas, the duodenum and the lower end of the common duct is common to all the modifications in the one and two stage operations that have been developed by a number of surgeons during this period. It is now generally agreed that with the transfusion therapy before, during and after operation to maintain blood volume, and the preoperative use of vitamin K and the nonabsorbable suture technic during the operation, that the one stage procedure is an easier and safer one than the two stage operation. The statistics reported from the Mayo Clinic, from the Presbyterian Hospital in New York and from the Billings Hospital in Chicago bear out this statement. It is logical that the radical operation for carcinoma of the ampulla should give better follow-up results than the radical procedures for cancers of the head of the pancreas. The type of carcinoma occurring in the ampulla is more apt to be of the fungating variety than the infiltrative types seen in the head of the pancreas. The early warning signal of jaundice is much more common in the cancer of the ampulla than in cancer of the head of the pancreas, where the growth may begin at some distance from the common duct, retarding the appearance of jaundice and lengthening the time for metastasis to lymph nodes and liver. One feature which is seen in many of these radical resections is the varying extent of the portion at the head of the pancreas spoken of as the lingula, which in some cases surrounds the superior mesenteric vessels and the portal vein, increasing the difficulties of separating the pancreas from these vascular structures. It is at times exceedingly difficult to tell by palpation whether the growth is removable when the head of the pancreas and the duodenum are mobilized and found to be freely movable. A method which Dr. Waugh has recommended is to begin the resection of the antrum of the stomach and common duct before dividing the duodenal jejunal junction of the jejunum distal to that area. There have been few, if any, five year arrests reported with these radical procedures. The only one in my experience has been for six years, but this patient in her last follow-up visit showed evidence of metastasis to the liver. On the other hand, it must be granted that many of these patients live for periods of one or two years free of jaundice and are given an extension of life which they would not otherwise have. The secret of success in obtaining the five year results with patients with these lesions is dependent entirely on early diagnosis, before the patient has gone for periods of weeks or months with increasing jaundice, and in this respect the internist and general practitioner can do more than any one else, referring suspected cases for surgical therapy.

DR. RICHARD B. CATTELL, Boston: Dr. Waugh has presented a large experience which he and his associates have had during these past three and one half years. I should like to confine my remarks to the resections for malignant disease, commenting on a series of cases which my associates and I have had in our clinic. He reported 38 patients who had resection of the head of the pancreas and duodenum for malignant disease, and during a somewhat longer period of time—since August 1942—we have had forty-four resections. The most important thing to appreciate, which has been brought out by Dr. Walters, Dr. Waugh and Dr. Whipple, has to do with the establishment of the diagnosis even in the early cases that have been explored. Unless one is able to demonstrate at operation that there is dilatation of the biliary tract and, in most cases, dilatation of the pancreatic duct which is readily palpable by digital examination, a malignant growth is not present. In most of these favorable cases from our experience, resection must be done without a positive biopsy, so that we must have these operative findings and, in most cases, the advantage of having a palpable tumor. How may one, then, determine operability in these cases? I am sure that all who are interested in this problem have been guilty of resecting lesions that should not have been resected, because resections of extensive lesions have given very bad results. Let us take, then, three contraindications to operation: (1) distant spread—and it may be possible to do a biopsy; (2) local extension—I should like to exclude those—and (3) involvement of either the portal vein or the superior mesentery vessels. If we exclude these, in 20 to 30 per cent of the cases of obstructive jaundice due to cancer resection should be done. Whipple and Waugh have both said that they feel a one stage operation should now be done with all the adjuncts that there are to resection. I should like to sound a warning relative to doing all of these cases in one stage. If the liver is very large with pronounced distention of the biliary tract, it seems to me that a one stage procedure for decompression of the liver does not complicate the second procedure and may well be advantageous to employ. Such a procedure can be easily and quickly done by a duodenojejunostomy to the full width of the gallbladder. When palliative resections are not sufficiently justified, three things can be done for palliation: the obstruction in the biliary tract can be relieved, the pancreatic obstruction can be relieved and the major blood supply that goes to the tumor can be tied up.

A Critical Caloric Value.—Our observations on protein-depleted animals are in agreement with those cited on patients and growing animals. Thus there is a restriction in the utilization of a constant quantity of protein when the caloric intake falls below a critical value of about 1,240 Cal. per square meter per day. Furthermore, elevation of the caloric intake above this level does not increase the effectiveness of the dietary protein for the synthesis of new tissue. Benditt, E. P., and others, *Journal of Laboratory and Clinical Medicine*, March 1948.

Clinical Notes, Suggestions and New Instruments

HEMORRHAGIC DIATHESIS IN HIROSHIMA, NAGASAKI AND AT BIKINI ATOMIC BOMB TEST

ALFRED L. COPLEY, M.D.
New York

In three recent articles Warren and Draeger,[1] Warren[2] and Draeger and Warren[3] respectively described the occurrence of petechial hemorrhages and thrombopenia in the victims of Hiroshima and Nagasaki and in the animals which were tested at Bikini. Allen and Jacobson[4] found that hyperheparinemia and hemorrhagic manifestations occurred in animals after acute exposure of the whole body to high ionizing irradiations in the midlethal range. The increase of heparin in the circulation, thrombopenia and petechiae were the outstanding abnormalities noted in irradiated dogs.

Copley and Robb[5] have demonstrated that heparin produces thrombopenia in vivo and a decrease of single platelets in vitro. Copley and Houlihan[6] were able to explain this by showing that isolated platelets are agglutinated when incubated with heparin plasma. Thus heparin, although highly active as an anticoagulant, not only does not inhibit platelet agglutination, but induces it. This accounts for the thrombopenia.

The occurrence of petechial hemorrhage following injection of heparin was observed by Chambers and Zweifach[7] in their extensive studies on hemorrhage and hemorrhagic shock, and by Copley and Lalich[8] in their studies on hemostasis in mice. The appearance of petechial hemorrhage following injection of heparin in the nictitating membrane was recently reported by Chambers and Copley.[9] In still unpublished findings my assistant, Mr. George Koram, and I have found the constant occurrence of white emboli in the nictitating membrane of the rabbit on the injection of heparin either systemically or locally. Injections of "merthiolate" or moccasin snake venom exhibited always petechial hemorrhages but only rarely the phenomenon of white emboli. This summer I repeated the experiment by systemic injection of heparin and have observed the same phenomenon of white emboli in the capillary circulation of the cheek pouch of the hamster.[10] Immediately thereafter blood samples were secured directly from the heart and placed between cover slips. Numerous small white emboli were observed in undiluted blood and in blood diluted with isotonic sodium chloride solution, 1:10. These emboli, which consisted of platelet agglutinates to which white cells adhered occasionally, were of the same size as the emboli seen in the capillary circulation.

Apparently embolization induced by heparin which accounts for the thrombopenia may also take part in the formation of the petechial hemorrhages. This may occur not only in heparinized subjects but also in men and in animals exposed to ionizing radiation.

From the Laboratory of Cellular Physiology, Department of Biology, New York University.

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7. Chambers, R., and Zweifach, B. W.: Personal communication to the author.
8. Copley, A. L., and Lalich, J. J.: Unpublished findings, 1940-1942.
9. Chambers, R., and Copley, A. L.: A Method and Observations on Capillary Fragility in Rabbits, Federation Proc. 6:188, 1947.
10. Copley, A. L.: Embolization of Platelet Agglutination Thrombi in the Hamster's Pouch Produced by Heparin, Federation Proc. 7:22, 1948.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report.

HOWARD A. CARTER, *Secretary*

DURA-LATEX PILLOW ACCEPTABLE

Manufacturer: Century Fabrics Company, 831 West Van Buren Street, Chicago 7.

The Dura-Latex Pillow is designed for the use of patients afflicted with allergies. It is intended that this pillow will alleviate distress caused by symptoms of allergy and asthma due to inhalation of products of disintegration or deterioration of such pillow fillings as down, feathers, wool or kapok. The pillow is made of a heavy grade cotton pillow ticking, containing two muslin dividers which create three separate pockets within the ticking. These pockets are filled with foam rubber, which has been shredded into flakes. The foam rubber is made by frothing natural or synthetic liquid latex along with other ingredients into a foamy consistency which is molded and cured into a soft resilient mass. This mass is then shredded into the flakes which are used for the filling. The use of the dividers forming separate pockets within the pillow prevents the shredded flakes from bunching up in one portion of the pillow.

The dimensions of the pillow are 66 by 46 cm. (26 by 18 inches); the thickness is roughly 10 cm. (4 in.) and the weight 1.8 Kg. (3 pounds, 15 ounces). The shipping weight is 4 pounds, 8 ounces (2 Kg.).

A sample pillow submitted by the firm was examined independently by two allergists who reported it satisfactory. One noted a slight odor of rubber, but both were of the opinion that contact dermatitis or other symptoms in rubber-sensitive patients were unlikely in view of the construction of the pillow casing. Both recommended acceptance.

The Council on Physical Medicine voted to include the Dura-Latex Pillow in the list of accepted devices.

THERAPEUTIC EAR LAMP ACCEPTABLE

Manufacturer: Air-Shields, Inc., Hatboro, Pa.

The Therapeutic Ear Lamp is a small source of infrared radiation shaped somewhat like a headphone; it may be fastened over an affected ear by means of the attached head bands. It can be plugged into any 110 volt outlet, either alternating or direct current. Since it lacks a switch, it must be turned off by pulling out the plug.

A specimen of the apparatus was examined for the Council in a children's division of a large hospital acceptable to the Council. The report stated that the lamp afforded some relief from pain in acute otitis. It was difficult to keep in place on the heads of children "particularly because of the shortage of nurses"; the youngsters would take it off or pull out the plug attachment. Nevertheless, the investigator concluded that the apparatus was not dangerous in any way.

The Council on Physical Medicine voted to include the Therapeutic Ear Lamp manufactured by Air-Shields, Inc., in the list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Twelve dollars per annum in advance

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SATURDAY, MAY 8, 1948

EDITORIAL ANNOUNCEMENT

The absence of the compositors from their work continues. This issue of THE JOURNAL has been prepared in part by the use of Vari-Typer machines.

THE NATIONAL HEALTH ASSEMBLY

The National Health Assembly which heralded the beginning of May in Washington, D. C., established what is apparently a new record for such conferences. Definite efforts were made to ascertain points of view, to attach proper weight to each of them, and on the basis of the evidence submitted, to propose recommendations which might be considered objectives or goals in advancing health during the next ten years. Previous conferences have been suspect of having propaganda in behalf of certain proposals leading to legislation as their prime motivation. If that was the original intent of the National Health Assembly of 1948, and it seemed to be such when the proposed assembly, its financial supporters and executive committee were announced a few months ago, the subsequent developments and the final action taken have resolved the doubts and anxieties. For this credit should be be assigned perhaps to Mr. Ewing and his associates, notably Dr. Howard Kline, who evolved from the original executive committee of twenty-four members with only one physician a final committee aggregating thirty-nine with official representation for the American Hospital Association, the American Dental Association, the conference of State and Provincial Health Officers, the American Medical Association and similar bodies. On this executive committee will fall the final responsibility for evaluating the recommendations that come from the different panels or sections and for issuing a final statement to clarify objectives in health for the people of the United States.

Between seven hundred and eight hundred interested members of almost every agency in the United States concerned even remotely with health registered in the assembly. At least half of them were enrolled in sections devoted to such topics as medical personnel, local health units, research, nutrition, maternal and child health, chronic diseases and age, medical care and other significant classifications. These sections held four or more meetings in which opportunity to speak was given to any of those who wished to be heard on the subject of their own experiences or their criticisms of the opinions and experiences of others. As might be anticipated, panaceas, short-cuts, regimentations and revolutions were offered as solutions of the problems in the advancement and development of medical services. The bizarre and weird recommendations of radical proponents for remaking our system of medical care fell by the wayside. The recommendations of the steering committees in the individual panels seemed likely to yield technics for steady and continuous progress in meeting our medical needs.

In subsequent issues of THE JOURNAL the reports of each of the panels will be made available. The recommendations may be given consideration by the appropriate councils, committees and bureaus of the American Medical Association and by the House of Delegates, which will speak for the American Medical Association as to the policies considered acceptable.

Fortunately in this assembly, as contrasted with the National Health Conference of 1938, the American Medical Association was represented by competent experts in each of the fields concerned. Several members of the Council on Medical Service participated in the panel on medical care. Chairmen in several sections, notably maternal and child health, research, local health units, medical care, physical medicine, hospital facilities and mental health were distinguished Fellows of the American Medical Association. Members in adequate numbers served on the panels devoted to rural health, community organization, public health, hospitals, personnel and environmental sanitation. The Association had available, moreover, its public relations and publicity staff and additional members on the executive committee. The President of the American Medical Association and the Editor of

THE JOURNAL spoke before meetings of the entire assembly. The President-Elect, members of the Board of Trustees and of the various councils addressed the individual sections.

Clearly apparent from the first note sounded by Mr. Oscar Ewing in his opening address was recognition of the fundamental importance of a high quality of medical education for the solution of every medical problem. Second in emphasis was the necessity for consumer and professional cooperation in the development of adequate medical care at costs within the range of the mass of the people. Third was a perception of the necessity for continued experimentation in the development of technics of providing and distributing medical care suitable to the needs of a diversified population under varying economic conditions. Fourth was emphasis on the special problems of the Negro physician and the Negro patient. Such corollary questions as the availability of animals for experimentation, of funds for conducting the medical schools and research institutions on a high plane, hospitalization and health centers, technics of transportation of the sick for rural areas, cooperatives for health, group practice, medical insurance on a service or fee-for-service basis and elimination of the profit motive in prepayment plans developed extended discussion and indicated the need of more study by experts.

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President Harry S. Truman, the only speaker at the opening banquet, indicated again his concern over the health problems of the nation and his continued conviction that a compulsory sickness insurance system is an acceptable solution. By far the majority of representatives of the medical profession present could not concede on this point. The voices raised in support of this contention were the same old, and now somewhat weary, voices of the Physicians' Forum, Committee on the Nation's Health, the economists of the national headquarters of the A. F. of L. and the C. I. O. When the tumult and the shouting died, the record seemed to indicate that the Blue Cross Hospitalization Plans, the nonprofit voluntary prepayment plans, the cooperatives, the group health associations, the private agencies and other forms of organization for the delivery of medical services had enrolled millions and millions of people. While there were still knotty problems not yet unraveled and areas of insufficiency not yet supplied, the nation seemed to be on the way toward the development of a plan for the production and distribution of medical services suitable to the American democracy.

DIETARY THERAPY OF HYPERTENSION

Kempner[1] reported striking therapeutic effects in a majority of his patients with hypertension by the use of a diet of rice, fruit and fruit juice. From their tests on experimental hypertensive dogs, confirmatory tests of these effects were reported by Dick and Schwartz[2] of the Department of Medicine, The University of Chicago. Hypertension was produced in these dogs by the intravenous injection of streptococci.[3] The initial mean arterial blood pressure of 120.3 mm. of mercury was increased to an average of 181.6 mm. of mercury by such injections. The hypertension was maintained at this high level for two to four years. During this period the dogs were fed on meat and dog biscuits, approximately 900 calories per day. This routine diet was changed for eight weeks to a mixture of 170 Gm. of rice, 340 cc. of fruit juice and 60 Gm. of sugar, plus daily supplements of the necessary vitamins—a total daily intake of 900 calories. By the end of eight weeks the average arterial blood pressure of these 12 dogs had fallen from 181.6 mm. of mercury to 138 mm. of mercury, an average reduction of 43.6 per cent. In certain dogs the reduction was as much as 88 per cent; i.e., from 200 mm. of mercury to 132 mm. of mercury; 120 mm. of mercury was the approximate previous normal level. All dogs lost weight on the "rice "diet, the average loss being nearly 20 per cent.

Grollman[4] and his associates have suggested that part of this reported beneficial effect of the "rice "diet was due to a rigid restriction of sodium. A test of this factor was made by Bryant and Blecha[5] of the Diet Therapy Clinic, University of Michigan. For periods of several weeks to twelve months 100 patients with essential hypertension were placed on a diet of 2,200 calories, containing approximately 200 mg. of nitrogen, 2.2 Gm. of potassium, 70 Gm. of protein, 80 to 175 Gm. of fat, 130 to 230 Gm. of carbohydrate and vitamin supplements. A daily fluid intake of 3 liters was maintained.

No pretreatment blood pressure was below 170 systolic and 100 diastolic. There was a sig-

1. Kempner, W.: North Carolina M.J. 6: 61 and 117, 1945.
2. Dick, G.F., and Schwartz, W.B.: Proc. Soc. Exper. Biol. & Med. 65: 22, 1947.
3. Dick, G.F.: Experimental Hypertension: Its Production in Dogs by Intravenous Injection of Streptococci, Arch. Path. 39: 61 (Feb.) 1945.
4. Grollman, A.; Harrison, T.R.; Mason, M.F.; Dexter, J.; Crampton, J., and Reichsman, F.: Sodium Restriction in Diet for Hypertension, J.A.M.A. 129: 533 (Oct. 20) 1945.
5. Bryant, J.M., and Blecha, E.: Proc. Soc. Exper. Biol. & Med. 65: 227, 1947.

nificant lowering of blood pressure to or below 155 systolic and 95 diastolic in approximately 20 per cent of their cases, and a lowering of diastolic pressure to or below 95 in an additional 15 per cent. Several patients who originally displayed papilledema and moderately severe heart failure became free of symptoms and have shown a definite decrease in heart size accompanying the fall in blood pressure. Older patients with long-standing hypertension have experienced more striking improvements than younger patients. In a few instances, symptoms suggestive of sodium privation have been observed, which were readily controlled by a reduction in fluid intake.

Rigid restriction of sodium intake thus presumably explains in part the favorable results reported in hypertensive dogs when placed on a rice—fruit juice diet. Other concernable factors in this diet are now under investigation. Experimental renal hypertension in dogs, however, finds its counterpart in only a relatively few cases of hypertensive disease in man, so that results from the canine tests will be of only limited clinical application.

Current Comment

THE PROPOSED DRAFTING OF PHYSICIANS

The Council on National Emergency Medical Service, after considering the proposed drafting of physicians in connection with the reactivation of selective service, announces that it opposes any legislation that singles out doctors of medicine as a separate group from their fellow citizens for registration, draft, induction or selection for duty with the armed forces of our country. The Council strongly urges immediate establishment of a civilian medical board at the highest level of government, such as a functioning agency of the National Security Resources Board, to be responsible for the policies and programs required for the medical, health and sanitary services of the civilian population, of industry, of agriculture and of the armed forces in time of emergency or national mobilization. In time of a national emergency as differentiated from the current proposed expansion of the armed services, the Council recommends the establishment of the following priority system for the activating or the calling up of civilian medical personnel or units into the armed forces:

1. Those recent graduates who were enrolled in A.S.T.P. or V-12 programs who have not completed their obligated tour of duty as a medical officer and all others who were deferred by Selective Service to continue their medical education.
2. Other physicians who did not serve in World War II.
3. Those physicians who served the least in World War II.

The Council urges each state and local medical association to exert every effort and influence at its command within the next several days to assure the establishment of a civilian medical board in the highest level of our national government, such as a functioning unit of the National Security Resources Board. Appeals should made not only to elected representatives in Congress but to Mr. Arthur Hill, Chairman of the National Security Resources Board, Washington, D. C., and Mr. James Forrestal, Secretary of Defense. The creation of such a civilian medical board is an urgent necessity if a sound medical program and policy is to be established at the national level for the civilian population, for industry and for agriculture to be effective in a time of national emergency. The program should become operative preceding the accomplishment of the request of the armed forces, which must of neccessity deplete the limited national resources in medical personnel and facilities.

THE DISTINGUISHED SERVICE MEDAL

The eleventh award of the Distinguished Service Medal of the American Medical Association will be made at the Inauguration Meeting Tuesday evening, June 22, during the Chicago Session. This award is recognized as one of the highest honors within the gift of the American Medical Association. The medal was first presented in 1938 to Dr. Rudolph Matas of New Orleans. Since that time it has been presented to Dr. James B. Herrick of Chicago, Dr. Chevalier Jackson of Philadelphia, Dr. James Ewing of New York, Dr. Ludvig Hektoen of Chicago, Dr. Elliott P. Joslin of Boston, Dr. George Dock of Pasadena, Calif., Dr. George R. Minot of Boston, Dr. Anton J. Carlson of Chicago and Dr. Henry A. Christian of Boston. Any Fellow of the American Medical Association may submit nominations, which should be sent, together with a record of the scientific services of the nominees, to the chairman of the Committee on Distinguished Service Awards, Dr. William Weston, 1428 Lady Street, Columbia, S. C., or to the Secretary of the Association at 535 North Dearborn Street, Chicago. After careful consideration of all nominations received, the Committee will submit five names to the Board of Trustees, and the Board will select three of the five for presentation to the House of Delegates at its first meeting during the Chicago Session. The House of Delegates makes the final selection by official ballot. The recipients of the Distinguished Service Medal thus far have been physicians of distinction whose selection has honored not only the men themselves but also the American Medical Association. Nominations should be received by Dr. Weston not later than May 30. Obviously an extensive list of distinguished physicians nominated for this award will enable selection of a recipient whose name will add luster to the list of those previously chosen.

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.—Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following report of the Secretary is respectfully submitted:

Membership

On April 1, 1948 the official membership list of the American Medical Association contained the names of 136,668 physicians, representing an increase over the preceding year of 4,444. In preparing this report, the Secretary found it of interest to make certain comparisons: Ten years ago, on April 1, 1938, there were 109,435 members of the Association and, according to figures compiled by the Biographic Department, there were 173,879 physicians in the United States and its dependencies. The biographic records in 1948 show 201,200 physicians in the United States and dependencies, an increase of 27,321. It is interesting to note that the increase in membership in the American Medical Association over the ten year period was 27,233, only 88 less than the increase in the number of physicians. It would appear that the American Medical Association is indeed representative of the entire medical profession of the country.

Fellowship

The Fellowship roster on April 1, 1948 carried the names of 76,161 Fellows, an increase over the preceding year of 3,273. The loss of a little more than 5,500 Fellows during the war years has been recovered, and the number enrolled on April 1, 1948 is the highest that ever has been recorded since Fellowship was established many years ago. This, also, is evidence of the strong position the Association holds in the leadership of the American medical profession.

The usual table showing membership and Fellowship in the constituent state and territorial medical associations accompanies this report.

Conference of State Secretaries and Editors

The annual conference of state medical society secretaries and editors was held at Association headquarters in Chicago on Nov. 7 and 8, 1947. As had been done for the first time in the previous year, a committee of conference members made up the program. New departures in 1947 were panel discussions held in various offices throughout the building and separate dinner meetings for the secretaries and the editors. Some of those in attendance expressed disappointment that it was not physically possible to attend each panel discussion and each evening meeting. The committee to arrange the program for the 1948 conference will undoubtedly bear that fact in mind.

The members of this conference, primarily the secretaries of the constituent state medical asso-

Organization of Constituent State and Territorial Medical Associations, April 1, 1948

	Number of Counties in State	Number of Component Societies in State	No. of Counties in State Not Organized		No. of Physicians in State 17th Ed. A. M. Directory	No. of Members of State Associations		Number of Fellows in State
			1947	1948		1947	1948	1948
Alabama	67	67	..	..	2123	1602	1623	705
Arizona	14	14			615	426	478	331
Arkansas	75	60	9	8	1096	1131	1149	425
California	58	58	0	0	12365	6613	6693	5001
Colorado	63	27	1	1	1885	1353	1973	797
Connecticut	8	8			2720	2209	2348	1429
Delaware	3	3			360	246	259	151
Dist. Columbia					4540	1084	1218	787
Florida	67	33	16	17	2391	1635	1775	1074
Georgia	159	90	37	39	2814	2012	1997	880
Idaho	44	9		1	446	335	322	148
Illinois	102	92	6	6	12548	9361	9615	4730
Indiana	92	81	1	1	4165	3618	3777	1733
Iowa	99	97			3102	2342	2312	1163
Kansas	105	76	15	15	2042	1545	1594	895
Kentucky	120	108	3	4	2717	1821	1954	864
Louisiana	64	62	17	15	2601	1676	1767	878
Maine	16	15			1011	709	754	364
Maryland	23	23			3005	1860	1983	1205
Massachusetts	13	10			8005	5845	6107	3114
Michigan	85	55		2	6589	4598	4751	2489
Minnesota	87	35	1		3614	3276	3151	1475
Mississippi	82	27	3	3	1525	911	1053	342
Missouri	114	74	7	9	5183	3517	3566	1749
Montana	56	18	21	20	556	408	431	247
Nebraska	93	50	16	16	1637	1118	1163	735
Nevada	17	5	12	12	174	168	171	99
New Hampshire	10	10			687	539	566	308
New Jersey	21	21	..	..	6000	4504	4825	3476
New Mexico	31	14	17	17	447	312	285	202
New York	62	61	1	1	27928	20962	21717	10787
North Carolina	100	67	24	24	2871	2693	2280	1086
North Dakota	53	13	11	11	520	388	378	181
Ohio	88	88	1	..	9406	7221	7214	3788
Oklahoma	77	57	6	6	2284	1613	1545	716
Oregon	36	27	1	1	1493	1142	1210	642
Pennsylvania	67	60	5	7	13503	10579	10750	6586
Rhode Island	5	7	1	..	950	832	838	399
South Carolina	46	36	4	5	1427	1076	1030	428
South Dakota	69	13	1	..	493	313	333	143
Tennessee	95	51	23	25	2961	1841	1913	1038
Texas	254	125	..	1	6952	5321	5679	2268
Utah	29	8	4	5	585	561	591	345
Vermont	14	10	3	3	551	362	398	210
Virginia	100	50	8	9	2920	1991	2036	1307
Washington	39	25	13	12	2234	1765	1854	926
West Virginia	55	29	5	5	1834	1385	1482	756
Wisconsin	71	52	..	..	3551	2806	2854	1429
Wyoming	24	11	11	11	243	197	196	125
Alaska	..	..	..	..	79	49	43	19
Hawaii	5	4	1	1	395	367	369	145
Isthmian Canal Zone	..	..	..	..	181	70	69	29
Philippine Islands	..	..	..	..	4209	..	..	3
Puerto Rico	7	7	..	..	526	526	563	186
Foreign	..	..	..	..	17	....	....	166
	3084	2011	314	321	185803	132236	136668	71484
Commissioned medical officers								4677
TOTAL								76161

ciations and the editors of the state medical journals, find in it much of value to them in their official capacities. It is the only meeting sponsored by the Association which brings together at one place and time the executive workers in the constituent organizations. It affords them and the headquarters staff opportunity to get together and iron out any wrinkles in office detail that may have developed and also affords a unique and valued opportunity for the secretaries and editors to learn more about what is going on in other states than can be learned from any other source.

In recent years official personnel of many state associations aside from the secretaries and editors have attended the conference, and it is hoped that they will continue to do so.

Actions of House of Delegates

The Secretary has complied with provisions of resolutions adopted at the Atlantic City Annual Session and the Cleveland Interim Session of the House of Delegates either by direct correspondence from his own office or by reference to the proper Council, Bureau or Committee of the Association.

Field Activity

As in the previous year, the Secretary has attended and participated in a great many meetings of state medical associations as well as a number of meetings of organizations closely allied to the medical profession. He has accepted active membership on a number of committees other than those of the Association having to do with medical affairs. While this activity has, of course, caused frequent absences from the office, it is believed that any consequent delay in routine work is offset by the advantages of wide personal contact with all phases of medical organization.

Assistant Secretary

Some time ago the Board of Trustees authorized the employment of an Assistant Secretary and on April 1, 1948 Dr. Ernest B. Howard became affiliated with the American Medical Association in that capacity. Dr. Howard is a native of Massachusetts, a graduate of Harvard University, Harvard University School of Public Health and Boston University School of Medicine. He is licensed to practice medicine in Massachusetts and in California. He was at one time director of the Division of Genito-infectious Diseases in the Massachusetts Department of Health and later was assistant director of the Venereal Disease Control Program of the United States Army, Office of the Surgeon General. For the past two years Dr. Howard has served as chief of the Health and Sanitation Field Party in Peru for the Institute of Inter-American Affairs.

The Secretary is confident that the employment of Dr. Howard as Assistant Secretary will prove to be an advantageous and forward step for the association.

All these activities have played a vital role in educating the American public to the advancements of medical science, plus the unexcelled services which physicians render for the benefit of mankind.

Office of Executive Assistant

Coordination and Public Relations

The public relations activities of the American Medical Association are being coordinated with the state and county medical societies and the public through the Office of the Executive Assistant to the Secretary and General Manager. This Office is now directed by Mr. Lawrence W. Rember, who assumed his duties Dec. 16, 1947. At the same time Theodore R. Sills and Company was retained as Public Relations Counsel to the Association.

The Director of Press Relations and an assisting staff of three work as part of the Office of the Executive Assistant. The Board of Trustees has approved a public relations budget calling for the employment by the Executive Assistant of a staff assistant and a staff writer.

Service to State and County Medical Societies

An increasing number of constituent state medical associations and component county medical societies are expanding their public relations programs to include the addition to their staffs of a public relations director or field secretary. Other states are planning to employ public relations firms to assist them in expanding their public relations activities. A program is now being formulated by the Office of the Executive Assistant to be of continuing and growing service to those responsible for conducting state medical public relations programs and county and community medical public relations programs. This is to fill a need expressed by many societies.

Some of the services to be provided include (1) holding an annual American Medical Association Public Relations Conference, (2) acting as a receiving and distributing center for state and county society public relations ideas and materials, (3) being available to state associations for consultation, (4) participating in state and county society public relations conferences, (5) stimulating the development and enlargement of state and local programs, (6) originating and preparing public relations materials and ideas of value to state society and county society programs and (7) answering and servicing special public relations requests directed to association headquarters by state associations.

A survey of the medical public relations programs of state medical associations has been completed by the Executive Assistant. Staff provisions, budgets, channels employed, the first five public relations objectives, enlargement plans and unusual activities were studied. The results of this nationwide survey have been put into chart form and an analysis has been prepared to accompany the chart. These will be distributed to the state associations for their evaluation.

Several public relations mailings to state medical associations have already been made by the Office, and a high degree of interest and a most favorable response to this type of service has been indicated. The Executive Assistant attended the public relations meeting in Boston of the Council of the New England States Medical Societies to become more familiar with the public relations thinking and doing of state and county medical groups. He addressed the meeting of the Nebraska state and county medical society officers on the subject, "Public Relations, National, State and Local." He also attended the Public Relations Panel conducted during the Regional Conference on Medical Service at Cleveland. Mr. Theodore R. Sills addressed the Minnesota meeting of state and county medical society officers on the subject, The Public Looks at the Doctor." Participation of this kind will undoubtedly multiply in the months ahead.

Secretary's News Letter

The weekly Secretary's Letter has become firmly established as a vital news liaison between the office of the Secretary and General Manager of the

Association and the medical profession and its component and constituent societies. Because of the increase in circulation to over 3,000 copies per Letter, requests for it from others than officers and committee members of national, state and county societies cannot be filled. Activities of the various Councils, Bureaus and Committees of the Association are being reported promptly in the Letter. National happenings outside of the Association which the Secretary feels should be called to the attention of recipients are included. Unsolicited comments reaching headquarters are most favorable to the Letter.

Service to Councils, Committees and Bureaus

Public relations problems confront the councils, committees and bureaus of the American Medical Association in their various relationships. The services of the Office of the Executive Assistant are accessible at all times and are frequently called on and extended.

One special phase of service is that of publicizing the interim and annual sessions of the Association. During the Cleveland Interim Session, it was frequently commented that "One of the most successful phases of this meeting is the splendid publicity obtained."

Another special phase of service is that of publicizing special conferences sponsored by councils and committees of the Association. For example, the National Conference on Rural Health, because of its public relations value, was used as a test of what could be accomplished with adequate public education organization and manpower. Four radio networks, coast to coast, broadcast special news interviews and news salutes on the Conference. One hundred and twenty-six radio farm directors included news reports and analyses of the Conference on their farm hours, which reach millions of rural listeners. Over one hundred national, regional and state farm magazines received a complete set of news digests of the Conference speeches, and in addition special human interest photographs were furnished to some publications. Newspapers, both daily and weekly, throughout the United States received news stories over the wires of the Associated Press, United Press and International News Service and through the services of the Western Newspaper Union and the National Women's News Syndicate. In addition, forty nationally known science writers got the news. About five hundred persons attended the Conference in Chicago. Many more than 50,000,000 persons attended the Conference via their radio sets, newspapers and magazines. Such is the power of publicity in extending the valuable work of the councils, committees and bureaus of the Association.

Press Relations

Press relations is a vital part of public relations. One of the chief functions of the Press Relations Bureau is to write and distribute the weekly news bulletin, *American Medical Association News*, which contains official announcements of the Association and condensations of original articles and editorials appearing in THE JOURNAL, *Hygeia* and the special journals. This news release, containing material which may be reprinted or republished, is mailed to approximately 1,200 newspapers, press associations, magazines, radio stations, industrial house organs, medical journals and bulletins. All those who receive the release have made specific, voluntary requests to have their names placed on the mailing list. Through the years, the *American Medical Association News* has become a recognized medium for the dissemination of news pertaining to medical progress. A casual perusal of a few magazines and newspapers indicates that there is a wide interest in articles on medical subjects.

During 1947 the Press Relations Bureau received more than 4,000 inquiries from newspapers, press associations, magazines, radio stations and the like. These information centers have come to rely on the Bureau for accurate scientific facts on medicine and health. An estimated 63,000 individual stories, based on Association news releases, were published in newspapers in every state in the union during the year. The estimate is made on the basis of press clippings received in the headquarters office. The response to American Medical Association releases was much better because of the gradual relaxation of wartime restrictions on newsprint. From the number of clippings received, more newspaper and magazine stories about the Centennial Session in Atlantic City were published than for any other medical meeting ever held anywhere in the world. More than seventy writers were registered for the five day session, including three science writers from the Associated Press alone. Mr. Howard Blakeslee of the Associated Press, dean of American science writers, reported that eight thousand words a day were written on various phases of the Centennial Session by the Associated Press writers alone, the biggest single file that ever moved out of a convention city.

The press representatives were tendered a luncheon on the Saturday preceding the meeting at which time they were provided with abstracts of the most important scientific papers and with information concerning the special functions of the week. Two press rooms were in continuous operation, one in the convention hall and the other in the Traymore Hotel, where the House of Delegates met. The Press Relations Bureau provided many periodicals of national circulation with pictures related to the medical profession. These appeared on their covers and in feature articles during the Centennial Session.

During the Interim Session in Cleveland, newspapers were provided with abstracts of the best scientific papers delivered. From the point of view of publicity at that session, the award of the General Practitioner's Medal to Dr. Archer C. Sudan of Colorado made a real hit. The story of his success as a general practitioner in a small Colorado mountain town was carried far and wide by newspapers, magazines and radio stations.

The *American Medical Association News* reached a new all time high as far as newspaper response is concerned with the issue of Sept. 26, 1947. The five Chicago newspapers alone published a total of fifteen stories taken from this single issue. All the stories appeared in one day. This marked the greatest single day response since the publication was started several years ago.

Another story which received a "good play" in newspapers dealt with "Medicine and Economics"; it was written by Dr. Ernest E. Irons, Secretary of the Board of Trustees of the Association. His statement told how government medicine would give the American people an inferior, rather than a better, quality of medical care by limiting practitioners to "the deadly level of only average attainment." The *Chicago Tribune* alone devoted more than half a column to Dr. Irons' paper.

The gratifying response which the Press Relations Bureau has received from the press during the year indicates strongly that editors, reporters, feature writers and radio news commentators from every section of the country look to the headquarters office of the Association as a

dependable source of information regarding medical matters. They have sought information and advice on every phase of the multiple activities of the Association and of the profession. The Press Relations Bureau through its close contact with these groups, has succeeded in "killing" a great deal of inaccurate medical information. On many occasions inaccurate information regarding medical matters has been corrected in the process of publication, while in other cases such inaccurate information has been eliminated completely through the advice and service offered.

All these activities have played a vital role in educating the American public to the advancement of medical science, plus the unexcelled services which physicians render for the benefit of mankind.

Other Services

Many other public relations activities are carried on which arise out of the exigencies and opportunities of day to day operations. Professional and trade associations, institutions, companies and corporations, through their public relations departments, turn to the public relations department of the American Medical Association for assistance. This runs the gamut in variety of requests and needs to be met. The performance of such service through the public relations department has become an accepted part of modern business activity. Increased public good will and acceptance for the Association and the profession is the direct gain.

In Appreciation

The officers and members of official bodies as well as innumerable members and Fellows of the Association not in official position have throughout the year been most helpful and considerate in all situations that have arisen, and the Secretary wishes to express his sincere appreciation. The personnel at the headquarters office also has been most helpful and deserves much praise.

Respectfully submitted,

GEORGE F. LULL, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the members of the House of Delegates of the American Medical Association:

The following annual report of the Board of Trustees is respectfully submitted to the House of Delegates.

Income and Expenditures

The official reports of the Treasurer and the Association's Auditors are appended as a part of this report.

Revenues which reached a new peak of $4,233,580.25 in 1947 were offset by larger expenditures amounting to $4,284,427.55. The excess of expenditures over income was $50,847.30; an estimate prepared in advance of the year's end indicated a larger excess in expenditures than actually occurred. Broadened activities of the Association requiring additional personnel, higher basic wage rates for mechanical and clerical employees and materials purchased at higher prices than in the preceding year are accountable for the deficit. Total wages and salaries for the year amounted to $2,347,671.00, as compared with $1,916,310.69 in 1946. Expanded facilities of councils, bureaus and departments caused an increase in expenditures from $890,178.99 in 1946 to $1,128,427.65 in 1947, a difference of $238,248.66.

Direct taxes paid by the Association, exclusive of sales and excise taxes, aggregated $74,433.75. Only a nominal amount of $1,000 was paid for legal expense in 1947.

The cost of publishing periodicals increased to $2,840,344.46 in 1947 from $2,414,163.44 in 1946, due in part to increased circulation of some periodicals but principally to higher costs. Income from subscriptions to periodicals published by the Association amounted to $1,558,483.11, while the income from the same source in 1946 amounted to $1,506,046.90. Advertising income from periodicals published by the Association totaled $2,342,605.39 in 1947, compared with $2,079,081.60 in the previous year. Interest from investments produced a return of $133,998.80.

The Journal of the American Medical Association

The circulation of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has achieved a peak

TABLE 1.—*Approximate Count of Fellows and Subscribers on The Journal Mailing List Jan. 1, 1948 Showing Gain or Loss*

State	Fellows	Subscribers	Totals	Gain	Loss
Alabama	605	510	1,115	54	
Arizona	281	254	535	50	
Arkansas	375	371	746	44	
California	4,881	6,377	11,258	780	
Colorado	617	590	1,207	106	
Connecticut	1,129	1,029	2,158	93	
Delaware	151	135	286	37	
District of Columbia	687	1,031	1,718	..	23
Florida	974	842	1,816	143	
Georgia	700	796	1,496	113	
Idaho	148	131	279	35	
Illinois	4,270	4,452	8,722	146	
Indiana	1,633	1,065	2,698	76	
Iowa	1,063	657	1,720	39	
Kansas	745	549	1,294	48	
Kentucky	714	621	1,335	94	
Louisiana	728	760	1,488	86	
Maine	314	239	553	11	
Maryland	1,005	1,258	2,263	97	
Massachusetts	2,764	2,793	5,557	375	
Michigan	2,189	2,276	4,465	140	
Minnesota	1,325	1,304	2,529	177	
Mississippi	292	327	619	39	
Missouri	1,649	1,378	3,027	61	
Montana	197	148	345	18	
Nebraska	585	400	985	..	3
Nevada	74	52	126	3	
New Hampshire	258	158	416	28	
New Jersey	2,726	2,039	4,765	326	
New Mexico	166	164	330	10	
New York	10,334	9,590	19,924	686	
North Carolina	886	923	1,809	68	
North Dakota	181	160	341	18	
Ohio	3,588	2,368	5,956	274	
Oklahoma	616	513	1,129	19	
Oregon	542	513	1,055	74	
Pennsylvania	6,096	3,644	9,740	522	
Rhode Island	349	304	653	52	
South Carolina	378	378	756	43	
South Dakota	163	131	294	..	1
Tennessee	838	762	1,600	42	
Texas	2,068	2,073	4,141	390	
Utah	245	275	520	10	
Vermont	165	141	306	21	
Virginia	1,207	944	2,151	156	
Washington	836	887	1,723	84	
West Virginia	606	397	1,003	54	
Wisconsin	1,289	1,009	2,298	85	
Wyoming	95	66	161	..	2
U. S. Army	....	555	555	..	1,403
U. S. Navy	....	1,000	1,000	..	400
U.S.P.H.S.	....	115	115	6	
Alaska	14	53	67	9	
Canada	16	1,691	1,707	381	
Philippine Islands	2	823	825	825	
Cuba	2	595	597	174	
Hawaii	105	190	295	29	
Mexico	4	471	475	39	
Panama	19	67	86	12	
Puerto Rico	136	146	282	32	
Virgin Islands	....	4	4	1	
Foreign	111	8,801	8,912	2,344	
Advertisers and agents	....	....	321	....	5
Exchanges	....	....	331	36	
Complimentary copies	....	....	109	3	
			137,092	9,604	1,836

never heretofore achieved by any other medical publication and representing the leading position that it occupies in medical literature. Its contents are carried to the most remote sections of the world. Missionaries in the Far East and Africa receive it regularly, in many instances as their one source of contact with medical science. From many foreign nations have come requests for complete files of THE JOURNAL to replace those lost in libraries devastated by the war.

As the foreign literature has begun to appear again, THE JOURNAL has taken adequate cognizance by including in its Current Medical Literature columns a listing of the contents and abstracts of the original articles in these publications. The foreign correspondence in THE JOURNAL now includes regular correspondents in London, Paris, Rome, Naples, Madrid, Geneva, Brussels, Amsterdam, Oslo, Stockholm, Ankara, Moscow, Australia, Mexico City, Puerto Rico, Rio de Janeiro, Sao Paulo, Buenos Aires and La Paz (Bolivia). THE JOURNAL maintains a regular correspondent in Washington, D. C., and includes material not only in its Washington Letter but also in the sections devoted to various governmental agencies.

TABLE 2.—*Percentage of Physicians Receiving The Journal* *

State	Number Receiving Journal	Physicians in A. M. Directory	Approximate Percentage Receiving Journal
Alabama	1,315	2,128	53
Arizona	535	615	87
Arkansas	746	1,806	41
California	11,258	12,365	91
Colorado	1,307	1,886	64
Connecticut	2,158	2,720	79
Delaware	286	360	79
District of Columbia	1,718	4,540	39
Florida	1,816	2,391	76
Georgia	1,496	2,814	53
Idaho	279	446	62
Illinois	8,722	12,548	70
Indiana	2,698	4,165	65
Iowa	1,720	3,102	55
Kansas	1,294	2,042	63
Kentucky	1,335	2,717	49
Louisiana	1,488	2,601	57
Maine	553	1,011	55
Maryland	2,263	3,085	73
Massachusetts	5,557	8,095	69
Michigan	4,465	6,509	69
Minnesota	2,529	3,614	70
Mississippi	619	1,525	41
Missouri	3,027	5,183	58
Montana	345	556	62
Nebraska	985	1,637	60
Nevada	126	174	72
New Hampshire	416	687	62
New Jersey	4,765	6,008	79
New Mexico	330	447	74
New York	19,926	27,928	71
North Carolina	1,809	2,871	63
North Dakota	341	520	66
Ohio	5,956	9,406	63
Oklahoma	1,129	2,284	49
Oregon	1,055	1,493	71
Pennsylvania	9,740	13,503	72
Rhode Island	653	958	68
South Carolina	756	1,427	53
South Dakota	294	493	60
Tennessee	1,600	2,961	54
Texas	4,141	6,952	60
Utah	520	585	89
Vermont	306	551	56
Virginia	2,151	2,920	74
Washington	1,723	2,234	77
West Virginia	1,003	1,834	54
Wisconsin	2,298	3,551	65
Wyoming	161	263	61

* This table gives the number of physicians (based on the 17th edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army, Navy and Public Health Service are not included.

The columns of THE JOURNAL are exceedingly pressed at this time for space to be devoted to the activities of the many committees, councils and bureaus which are now official agencies of the American Medical Association. Thus, much space has been devoted to the Joint Committee for the Coordination of Medical Activities and to annual conferences on rural health, on medical education and on industrial health, to the district meetings of the Council on Medical Service, to the reports of the Council on Emergency Medical Service and to the studies made by the Bureau of Medical Economic Research and similar agencies. Space has been assigned for reviews of medical motion pictures. The demand for space is giving the trustees much concern; there is in prospect consideration of a special publication to be devoted largely to the social-economic and industrial aspects of medicine.

The weekly average of copies of THE JOURNAL printed in 1947 was 134,310, which is 11,475 more copies than were printed in 1946. The net paid weekly average circulation in 1947 was 132,664 copies, a gain of 11,542 over the preceding year.

The accompanying table 1 shows the number of Fellows and subscribers on the mailing list of THE JOURNAL as of Jan. 1, 1948. Table 2 indicates the number of physicians in each state, the number receiving THE JOURNAL and the approximate percentage of subscribers in each state.

As more paper has become available, THE JOURNAL has been able to extend somewhat its content, limited, however, by labor difficulties. Special issues have included those devoted to education, hospital, state board (licensure), the annual session, the interim session and industrial health numbers, as well as three index numbers.

Field Service of Editorial Staff

Many calls come to the editorial staff of the American Medical Association for addresses on a variety of subjects, to audiences of both the medical profession and the public. They are requested also to conduct courses in educational institutions on scientific writing, standardization of nomenclature and similar medical subjects.

Dr. E. P. Jordan, an associate editor who formerly edited the "Standard Nomenclature of Disease and Standard Nomenclature of Operations," has resigned from the staff and has been replaced by Dr. Richard J. Plunkett. Doctor Plunkett has assumed also the editing of the Standard Nomenclature and has attended several scientific meetings devoted to problems of nomenclature. The Board of Trustees has called a conference on nomenclature to be held in the headquarters office of the Association June 23, 1948, with a view to the preparation of a new revision of this book and its publication about 1950.

Dr. Johnson F. Hammond, an associate editor, has made several addresses each year to groups of physicians interested in problems related to medical writing and medical publication and to students in journalism and social welfare who have visited the headquarters office.

The Editor of THE JOURNAL delivers many addresses each year to county and state medical societies, business clubs, forums and educational institutions. During the current year he has conducted courses in medical writing for the American Academy of Ophthalmology and Otolaryngology and also at the University of Illinois College of Medicine. The Editor serves also on the scientific advisory boards and on the directorate of such organizations as the American Red Cross, the National Foundation for Infantile Paralysis, the American Heart Association, the American Cancer Society and the Division of Medical Sciences of the National Research Council. He has served also as consultant to several national organizations and publications and to the Army and Navy medical departments.

Special Journals

The high standard of the nine special scientific journals published by the Association was maintained during 1947, in spite of difficulty in maintaining a sufficient staff of competent manuscript editors. For this reason, and also because the paper shortage has not been entirely relieved, the size of the special journals has not been increased to what it

was before the war, and some delay has ensued in the publication of articles.

Excellent colored plates were published in practically all of the special journals. Part of the expense of the plates to reproduce illustrations in colors, which has increased considerably in the last two years, has been assumed by authors.

Dr. George E. Burch was elected to the Editorial Board of the *Archives of Internal Medicine* to succeed Dr. John H. Musser, who had served on the Editorial Board for fifteen years and who died in September. One of the special features of this periodical is its excellent reviews of the literature on blood, infectious diseases, vascular diseases, syphilis, neuropsychiatry, liver and biliary tract, the heart, allergy and gastroenterology. The editors are developing a special issue honoring Sir William Osler.

Dr. Howard Fox resigned as chief editor of the *Archives of Dermatology and Syphilogy*, and a special issue of that periodical in his honor was published in November 1947. Dr. Paul A. O'Leary, already a member of the Board, was appointed chief editor and Dr. Herbert Rattner was named associate editor. Dr. H. E. Michelson was added to the Board.

The July 1947 issue of *Occupational Medicine* was dedicated to Dr. Leroy U. Gardner. Special features of this periodical were the report of a Conference on Lead Poisoning, a special report on Cash Sickness Benefits for Railroad Workers and one on the Industrial Hygiene Division, Bureau of State Services, United States Public Health Service, and a symposium on Industrial Health Education and one on Workmen's Compensation, both of which were presented in the Section on Industrial Medicine and Public Health at the Atlantic City Session of the Association.

The *Archives of Otolaryngology* continues to publish summaries of the bibliographic material on functional examination of hearing, on tumors of the nose and throat, on otitis media and complications, on chronic progressive deafness, including otosclerosis and diseases of the inner ear, on tuberculosis, on tonsils and adenoids, on allergy and on peroral endoscopy. In the last volume there was a symposium on Fenestration of the Labyrinth which was presented at the annual meeting of the American Otological Society.

The *American Journal of Diseases of Children* printed two panel discussions, one on prematurity and one on adolescence, which had been presented before the American Academy of Pediatrics.

There was a total gain of $35,735.66 on five of the special journals, and a loss of $21,920.29 on four, so that there was a profit of $13,815.37 on the nine journals.

Each of the special journals, with the exception of *Occupational Medicine*, the newest member of the group, increased its circulation substantially during the year.

Book Publications

The American Medical Association press has in the past issued more than a score of books which have attained large circulation among the medical profession. Some of these books originate from articles published serially in THE JOURNAL; others originate with the individual councils and bureaus of the Association. The increasing demands made on the American Medical Association by the expansion of circulation of THE JOURNAL and of the special journals and also for the publication of material developed by the various departments and councils made necessary the transfer of the printing and publication of these books to private medical publishers. "The History of the American Medical Association" and the "Interns' Manual" are published by W. B. Saunders Company, Philadelphia. "New and Nonofficial Remedies," "The Epitome of the U. S. Pharmacopeia," "Useful Drugs" and "Fundamentals of Anesthesia" are published by the J. B. Lippincott Company, Philadelphia. "The Standard Nomenclature of Disease and Standard Nomenclature of Operations," "Medical Writing," "The Handbook of Physical Medicine" and a collected series of articles on cancer are in process of publication by the Blakiston Company. Negotiations are in process with other publishers for some of the other books published by the American Medical Association. Each of the books thus published will bear on the title page the statement "Published for the American Medical Association." By this agreement, the Board of Trustees has made it possible to circulate these books widely and to insure their proper promotion to the medical profession on a scale much larger than has been attempted previously. The income from these publications in the form of royalties reverts to the general funds of the American Medical Association.

Hygeia

In the field of education of the public on health, *Hygeia* occupies today the leading position of all publications in the United States. As a source for authentic material, it is in constant use by schools, educational groups, industrial organizations, lecturers and voluntary health organizations. The digest magazines in great numbers quote constantly from *Hygeia* so that its content is multiplied millions of times in a great variety of digest publications. Many newspapers and radio stations likewise depend on *Hygeia* as their source for material in the field of health. Among the campaigns in which *Hygeia* has been of special assistance are those on cancer, the heart, poliomyelitis, food, water and milk sanitation and many others. The American Red Cross has cooperated with articles on first aid and home nursing. *Hygeia* is also in process of developing a special section to deal not only with child care but also with behavior problems.

During the current year *Hygeia* has been published on the presses of Kable Bros. Company in Mount Morris, Ill. This has relieved to some extent the burden on the press of the American Medical Association. Moreover, certain advantages have accrued to *Hygeia* from the larger and more complete facilities of this large publishing house.

Circulation

Hygeia in 1947, for the first time in seven years, showed a loss. A new high, however, was reached in net paid circulation and in advertising income. The net loss of $48,683.94 was principally accounted for in the decrease in the amount of advertising secured and the increase in the cost of publication, the principal items being the printing of the magazine and salaries of clerical help. In fact, every item that went to make up the publication has gradually increased to practically double. A good share of the increased expense can be primarily attributed to the cost of producing the additional copies required by *Hygeia's* growing circulation. Over the twenty-five years of its existence, *Hygeia* has shown a net profit of $138,059.42.

The average monthly net paid circulation, during 1947 was 196,046 copies, as compared with 156,983 for the previous year, a gain of 39,063 copies.

For the second year the Student Group Study Plan in high schools was used. This plan offers *Hygeia* as an auxiliary textbook for classroom study at the special group rates on school orders of ten or more copies monthly, with a free copy to the teacher. A set of questions on articles in the current issue is mailed each month to the teacher as a guide in stimulating classroom discussion of health material. During the year the number of high schools using the plan increased to one hundred and twenty, with orders for a maximum of about 4,000 copies a month.

Subscriptions received in 1947 through the efforts of the Woman's Auxiliary to the American

Medical Association continued to show a gratifying increase. The orders received from this source totaled 20,145 years of subscription in 1947, as against 15,631 for the preceding year. For the sixth year, through the efforts of the Auxiliary, the Division of Health Education of the Pennsylvania Department of Health has renewed its ten month subscriptions for high schools in the state, placing 1,090 such subscriptions. During the past year, 1,450 nine month subscriptions were entered for all rural schools in Oregon through the efforts of the state auxiliary working in conjunction with the Oregon Public Health Association. Many of the active county auxiliaries have continued to introduce the magazine to new readers and to raise funds to present group subscriptions of *Hygeia* to schools, libraries, reading rooms and other organizations in their counties. The magazine is now being sent to state legislators in Indiana, Minnesota, Ohio, Oregon and Wisconsin.

During the year *Hygeia* was exhibited at the Annual Session of the American Medical Association and at the annual conventions of the American Nurses Association, the American Public Health Association, the American Home Economics Association, the American Dietetic Association and the National Education Association.

American Medical Directory

The Eighteenth Edition of the American Medical Directory is now being compiled, and it is hoped that the book may be ready for delivery during the early part of 1949.

Since publication of the 1942 edition, information on more than 42,000 new physicians has been added to the files and the names of more than 20,000 physicians who have died have been deleted.

During the last six weeks of 1947 information cards were mailed to all physicians in the United States, its dependencies and Canada, requesting them to provide current biographic information and their present address. Of the 210,000 cards mailed, 127,329 cards, or 60 per cent, have been completed and returned. A second request for information is now being sent to all physicians who have not responded to the first request.

Hospitals, libraries, medical societies and other organizations are now being sent a proof of the information listed in the previous edition of the Directory so that such data may be revised and brought up to date.

From early estimates it is expected that good support in the way of subscriptions will be received from physicians, hospitals and commercial firms.

Library

Although still operating under the difficult conditions prevailing in 1946, the Library continued to maintain its package library department and general reference services. Answers to approximately 6,000 reference questions were prepared during the year, many by correspondence and 2,355 through the preparation of package libraries on requested subjects. High blood pressure headed the list of subjects on which material was requested. The following subjects were also popular: pregnancy (all phases), the Rh factor, peptic ulcer, cancer, anesthesia, streptomycin, alcoholism, undulant fever and cirrhosis of the liver. Requests for this type of service came from every state in the United States. Numerous requests were received from European countries, particularly Italy, France, Hungary and the Netherlands, for material on recent advances in medicine in this country. Every effort was made to help the physicians making such requests and, while package libraries could not be sent to them, tear sheets from publications of the American Medical Association were prepared on the requested subjects and sent as gifts.

The periodical lending service increased considerably during the year. Requests for the loan of 12,232 periodicals were received, representing an average of approximately 1,000 periodicals a month. This service requires a great deal of clerical work. Of special notice are the increasing demands for Library service from the various Veterans Administration libraries throughout the country. Appreciation for the service given them during the year has been expressed in several letters.

An increasing number of requests was received from various foreign countries for the reestablishment of exchanges with American Medical Association publications. Approximately one hundred such exchanges were established with Latin American and European medical periodicals. A gradual resumption of the publication of German medical periodicals has begun, and requests have been received for the establishment of exchange relations from most of them. All such exchanges have been established with those German periodicals published in the American and British zones. Printed matter is not yet permitted to be sent into the Russian zone in Germany.

Three volume indexes of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION were prepared, as usual, in the Library.

The Library prepared an exhibit for the Centennial Session of the American Medical Association in Atlantic City, N. J. The work of the Library was explained by means of charts and sample package libraries. The exhibit undoubtedly acquainted many members of the Association with a service heretofore unknown to them, which is maintained by the Association at considerable expense for their particular benefit.

The American Medical Association Library was represented at a Symposium on Medical Subject Headings held in Washington, D. C., Dec. 12, 1947 under the auspices of the Army Medical Library.

Quarterly Cumulative Index Medicus

Due to circumstances beyond the control of the Association, only one volume of the QUARTERLY CUMULATIVE INDEX MEDICUS was published during 1947, Volume 40, covering the period July to December 1946. An unprecedented delay occurred in setting the type for this volume: copies were not mailed to subscribers until early in December 1947. Publications of the INDEX MEDICUS is becoming increasingly difficult, due to the lack of sufficient and trained personnel, paper shortages, binding delays and so forth. Many new periodicals were added to the list included in the INDEX MEDICUS, the great percentage of the new titles representing European and Latin American countries. All the more important French, Italian, Scandinavian and Belgian Periodicals are now being received and indexed. At the end of 1947 there were 1,156 periodicals included in the INDEX MEDICUS. Of this number, 634 were foreign language periodicals.

In spite of the delay in production, the total number of names on the mailing list increased in 1947 by 491. Publication of the Quarterly entailed a net loss in 1947 of $33,468.67, as compared with a loss of $51,154.09 in 1946.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau continues to assist the state medical journals in securing advertising sales, reviewing copy for the purpose of following standards and servicing each account, thereby eliminating many details for the journal offices. Helpful suggestions for advertising make-up and listings of products currently accepted by the Councils of the American Medical Association appear in the Bureau Bulletin issued each month.

The present membership consists of thirty-four state journals. The South Dakota Journal of Medicine began publication in January 1948 and is now a member of the Bureau.

Dr. Carl B. Drake, editor of Minnesota Medicine, was elected a member of the Advisory Committee of the Bureau to succeed Dr. Eldridge M. Shanklin, editor of the Journal of the Indiana State Medical Association.

The annual report of the Cooperative Medical Advertising Bureau indicates a further increase in advertising sales during 1947 over 1946. The billing for 1947 amounted to $632,394.53 after allowing for agency discount. This does not include billing for the Rhode Island Medical Journal from July through November or for California Medicine for October and November, since these publications resigned their membership in the Bureau as of June and September 1947, respectively. Gross sales exceeded $700,000. After allowing the customary 2 per cent cash discount to advertisers, totaling $12,613, and deducting the Bureau's operating expenses of $32,510.35, the net amount disbursed to the member journals during 1947 was $587,271.18.

That the Bureau has made considerable progress since its reorganization in December 1945 is shown by the fact that the net billing was increased $135,223.42 the first year and $175,361.26 the second year; the total increased business for both years amounted to $310,584.77.

The net billing for 1946 and 1947 amounted to $1,224,651.33. Previous billing, from 1913 through 1945 was $4,909,356.23, making the total to date $6,134,007.56.

Contract renewals and business on hand so far for 1948 amount to $563,476.65 and the outlook to date with a renewal expectancy of $27,810.52 on some of the present contracts which will expire during the period from May to November 1948 amounts to $591,287.17. Therefore, there will be a slight gain in 1948 for the state journal group as a whole.

Council On Pharmacy and Chemistry

The Council on Pharmacy and Chemistry is internationally known as a leader in medical research. For forty-three years it has fought for the advancement of what is best in therapy; it has encouraged research by discussion and by aiding in the organization of formative plans; it has made available grants-in-aid; it has spread medical information by various means to professional and lay groups, and it has extended the scope of its activities as needs arose.

During the past year the Council continued to advance these activities and to consolidate many of its objectives.

Research

Many conferences were held with individual research workers, with research organizations and with representatives of commercial organizations that were planning research. The Council has been actively interested in assisting in the planning of research, especially where the cooperation of several groups was involved. During the year, eighteen grants were made available and approximately thirty papers were published under the auspices of the Committee on Therapeutic Research.

Therapeutic Trials Committee

Another means by which the Council encourages research is through the Therapeutic Trials Committee, a standing committee of the Council. Several contracts for clinical investigations were executed under the auspices of the Committee during the year. Work on the following projects is now under way, and preliminary progress reports have been submitted; action of aludrine sulfate in bronchial asthma; action of streptomycin and antimony derivatives in lymphogranuloma inguinale and the action of chlorophyll preparations on the healing of wounds and in chronic nasal disorders. Final arrangements are being made to investigate the physical-chemical requirements for the preparation of ophthalmic solutions.

At the request of the National Foundation for Infantile Paralysis, the Committee explored the feasibility of conducting a nationwide critical investigation of certain methods recommended for the treatment of acute poliomyelitis. A subcommittee prepared a report outlining its recommendations with regard to such an investigation and transmitted it to the National Foundation.

The final planning of the Committee-sponsored collaborative investigation of estrogens and androgens in mammary cancer was completed during the year. Thirteen pharmaceutical firms have donated more than 5 Kg. of testosterone and proportionately large quantities of six estrogens for use in this investigation. The American Registry of Pathology at the Army Institute of Pathology is providing facilities for centralization and examination of all pathologic and roentgenologic material collected in this project. Thirty investigators at outstanding institutions in this country and Canada are participating in this investigation. Close liaison has been established with the Committee on Growth of the National Research Council, the National Advisory Cancer Council and the American Cancer Society, all of which have made funds available to participating investigators. The Subcommittee on Steroids and Cancer, which is in direct charge of this project, submitted a report, which has been published, to the Council on Pharmacy and Chemistry in summarization of the present state of knowledge on steroid hormones and mammary cancer and with an indication of the problems which require solution.

Twenty-one medical schools and hospitals were visited during the year and their facilities for research surveyed; members of the faculties interested in investigation were interviewed.

The Therapeutic Trials Committee is contemplating calling a conference at the end of 1948 of all investigators participating in the collaborative study on estrogens and androgens in mammary cancer. The purpose of this conference would be to provide an exchange of information among workers participating in these investigations and to plan the future direction of the project.

Publications and Reports

Many thousands of Council-sponsored publications, now being printed and distributed by an outside printing establishment, were sold during the year, and the number will continue to increase as all possibilities are explored. New and Nonofficial Remedies, Useful Drugs and the Epitome of the United States Pharmacopeia and National Formulary have become standard reference books in many medical and pharmacal schools. Although New and Nonofficial Remedies is not recognized as "official" under the provisions of the Federal Food, Drug and Cosmetic Act, it is generally regarded along with the United States Pharmacopeia and the National Formulary as a standard source book for statements on actions and uses of drugs and for tests and standards. In fact, a number of countries recognize "N.N.R." as an identifying mark when products are presented for entry at their borders.

The Council also adopted for publication various reports concerning the prevention and treatment of disease, among them reports on the status of methionine in the prevention and treatment of hepatic injury, use of tetrathionate, drugs for obesity, the effects of streptomycin on tuberculosis in man, homologous serum jaundice, estrogens and androgens in mammary cancer, the significance of the tissue reactions caused by antigens and "allergasol." Hundreds of reprints of these articles have been requested by physicians and others with mutual interest.

Acceptance of Drugs

One of the activities of the Council is the evaluation of remedies with the view to determining their acceptance for inclusion in New and Nonofficial Remedies. During the year, manufacturers made two hundred and seventy-three presentations to the Council, fifty-nine of which were presentations on new drugs. Of this total, three were rejected and nine others were held either exempt from the Council's rules or ineligible for consideration.

Meetings

The Council held one meeting in 1947. Consideration of products submitted to the Council and other problems are normally conducted by mimeographed bulletins that are

circulated every two weeks. The topics for discussion include problems associated with the use of multiple dose containers, the status of thyroxin, scillaren and thiouracil, the omission of sulfathiazole from New and Nonofficial Remedies because of its toxic properties, the use of a sulfonamide ointment for prophylactic purposes, the status of influenza vaccines and the effect of new strains of influenza virus, the status of protein hydrolysates and concentrates, amino acid mixtures and amino acids and the sale of "over the counter" items for reducing.

Collaboration

In addition to joint enterprise with other offices at Association headquarters, the Council and its office personnel or representatives worked closely with government and nongovernment, particularly philanthropic, agencies. For example, a representative appeared at the streptomycin conferences of the Veterans Administration, at the meetings of the Committee on Drug Addiction and Narcotics of the National Research Council and at meetings of the Committee on Blood and Blood Derivatives of the Advisory Board of Health Services of the American National Red Cross. The Secretary of the Council serves as a member of the U.S.P. Revision Committee and on several of the Pharmacopeial subcommittees. As soon as new products are accepted, the Council office transmits this information to the United States Public Health Service, Veterans Administration, Pharmacopeial Revision Committee, Committee on National Formulary, Army-Navy Medical Procurement Office and the American Pharmaceutical Association. During the latter part of the year, the Office of Technical Service requested the Council office to assist in the appraisal of microfilm dealing with German developments in medicine and related fields. This service is similar to one that was provided some time ago when the Office of Technical Service requested the Council office to assist in the evaluation of reports on drugs found in Germany by teams of scientists from the United States.

Staff of the Council Office

In addition to being available for consultation concerning Council problems, those members of the office staff who are professionally trained frequently appear in speaking engagements before other groups to explain the work of the Council and to discuss topics in which the Council has interest. The Secretary and other members of the staff appeared during the year before a significant number of medical, pharmacal and lay groups and addressed the students at several medical schools.

Appreciation

The Council on Pharmacy and Chemistry wishes to extend its appreciation to all who have assisted in its work, particularly the Board of Trustees, the personnel of other offices at Association headquarters and those apart from the Association who have so freely extended their facilities and information.

Chemical Laboratory

The Chemical Laboratory of the American Medical Association was instrumental in the development of tests and standards of identity, purity and potency for twenty-eight new medicinal products during 1947. In addition, it was responsible for the examination of nearly three hundred and seventy-five individual drug products in connection with consideration by the Council on Pharmacy and Chemistry.

During the past year, which marked the forty-first year of Laboratory operation, further reorganization of the staff has been accomplished. To keep abreast of the changes in standardization and in medical practice, the Laboratory must have, at all times, properly trained and experienced scientific personnel and modern equipment. This is necessary in order that the Laboratory may perform its chief function, complementary to that of the Council on Pharmacy and Chemistry, in the evaluation of medicinal agents which the medical profession is importuned to employ.

Work for the Council on Pharmacy and Chemistry

The Laboratory has drawn up tests and standards for the following products, which were examined in connection with Council consideration: d-desoxyephedrine hydrochloride ("norodin"-Endo); fibrin foam (human); absorbable gelatin sponge; mercocresols ("mercresin"-Upjohn); methadon hydrochloride ("dolophine"-Lilly); oxidized cellulose ("hemopak"-Johnson & Johnson); sodium ascorbate; diethylstilbestrol dipalmitate ("stilpalmitate"-Abbott); sodium ricinoleate solution ("soricin sclerosing solution"-Merrell); gold sodium thiomalate ("myochrysine"-Merck); dihydrocodeinone bitartrate ("hycodan bitartrate"-Endo); theophylline methylglucamine ("glucophylline"-Abbott); chlorguanide hydrochloride; diperodon ("diothane"-Merrell); oxyquinoline benzoate; dienestrol; sodium bismuth triglycollamate ("bistrimate"-C. D. Smith); butabarbital sodium ("butisol"-McNeil); sodium tetradecyl sulfate ("sotradecol"-Wallace & Tiernan); folic acid; propyl thiouracil; "dicumarol"; chloroquine diphosphate ("aralen diphosphate"-Winthrop); isobornyl thiocyanoacetate-technical; mannitol; choline dihydrogen citrate; para-aminobenzoic acid; para-aminohippuric acid, and dihydroxy aluminum amino-acetate.

Considerable time was spent in the examination of products for which standards are currently available in New and Nonofficial Remedies or in the U. S. Pharmacopeia and the National Formulary.

The Laboratory provided considerable assistance to the Council in connection with new monographs and descriptions of dosage forms published in THE JOURNAL during the year. It also aided in the revision of New and Nonofficial Remedies, 1947, especially through provision of many additional structural formulas and editing of the Section on Tests and Standards.

Work of a Miscellaneous Nature

A display indicating the nature of the Laboratory work during the past forty years was prepared and presented at the Centennial Session. Members of the staff have attended various scientific and technical conferences during the year, and a considerable amount of time has been spent in connection with the physical arrangement for the Annual and Interim Sessions of the Association.

Work for Other Departments of the Association

In addition to the work done for the Council on Pharmacy and Chemistry, the Laboratory has examined a number of products for the Bureau of Investigation and devices for the Council on Physical Medicine. It regularly provides technical advice to the Editorial Department and the Library in connection with chemical momenclature, phraseology and indexing. It examines and comments on medical products and devices for the Advertising Committee, when such products do not fall within the purview of a particular Council.

The Laboratory does not undertake commercial analysis on a fee basis, nor does it routinely undertake the analysis of specimens or products at the request of individual physicians. It must confine its work to those products of general interest to the medical profession and to the examination of new and nonofficial remedies. Only in this manner can the facilities and staff of the Chemical Laboratory accomplish the purpose for which it was founded, namely, to assist the Council on Pharmacy and Chemistry.

Council on Physical Medicine

In 1947 the work of the Council on Physical Medicine increased over that of the war years and indeed over any previous year of the Council's twenty-three years of existence. Approximately one hundred and twenty pieces of apparatus were submitted for consideration during the year, of which twenty-nine were considered, inspected and reported on in THE JOURNAL. Consideration is going forward on the remaining appliances. Among the devices were hearing aids, electrocardiographs, humidifiers, contraceptive devices, incubators, diathermy equipment, audiometers, stethoscopes, nebulizers, sunlamps and resuscitators. Contraceptive devices previously accepted by the

Council on Pharmacy and Chemistry were transferred to the list of accepted devices of the Council on Physical Medicine.

In the course of World War II physical medicine was employed by the armed services with significant success. Research was greatly stimulated; specialists in physical medicine in the Army and Navy carried the specialty over to civilian practice, and the general practitioner became informed about the value of physical medicine. Hence, physical medicine has gained in stature.

Publications

The booklet, "Apparatus Accepted," was completely revised and brought up to date. Eleven articles were published during the year: Tentative Standard Procedure for Evaluating the Percentage Loss of Hearing in Medicolegal Cases; Home Diathermy; Orthoptics—Second Paper; Minimum Requirements for Acceptable Electrocardiographs; Acceptance of Radiant Heaters; Minimum Requirements for Acceptance of Diathermy Apparatus; The Use of X-Rays for Treatment of Hypertrichosis Is Dangerous; Tentative Requirements for Acceptance of Respirators of the Cuirass Type; Minimum Requirements for Acceptance of Generators for Electrical Stimulation of Muscles and for Ion Transfer; Acceptance of Sunlamps (revised), and the Glossary of Terms Used in Discussions of Atomic and Nuclear Phenomena. Several other articles are awaiting publication.

Atomic Energy

The Council on Physical Medicine has been gravely interested in the medical aspects of atomic energy. Only a modest amount of radioactive isotopes has been made available for medical purposes to specialists by the Atomic Energy Commission. The results of clinical trials thus far released by the Commission have revealed a limited therapeutic usefulness. The scope for application of radioactive isotopes in medical research, on the other hand, seems infinite. The Council has sponsored several exhibits on the medical aspects of atomic energy. Within the limits of released information, the Council has endeavored to keep the profession informed. The pamphlet, "Glossary of Terms Used in Discussions of Atomic and Nuclear Phenomena,' has been most popular, and a copy of it may be had for the asking.

Artificial Respiration

Research in the field of artificial respiration has been financed through the year by a special grant awarded by the Board of Trustees. Many controversial aspects of artificial respiration as it applies to manual or mechanical methods have been clarified. Cordial cooperation with the American National Red Cross has resulted in careful and fruitful study of the problem.

Products Considered

Three sunlamps, one professional untraviolet lamp and one ultraviolet disinfecting lamp were considered by the Council and all were accepted. Two infrared lamps were considered; one was accepted and one rejected. Several pillows, and covers for mattresses and pillows for the relief of patients suffering with allergies caused by bedding dust, were considered and accepted. Generators of direct and alternating current for use in diagnosis and therapy were considered by the Council. It is the opinion of the Council that there is no necessity for multiplicity of current combinations in an apparatus, since the evidence submitted to justify some of them is not satisfactory.

Ultraviolet Radiation of the Blood

Therapeutic claims are made for the irradiation of blood. In the opinion of the Council, a device for irradiating the blood does not accomplish anything therapeutically which cannot be achieved by a simpler means.

Council Consultants

American Health Resorts—At the annual meeting of the Council in December, it was voted to appoint consultants on American Health Resorts. Prior to that time, questions on this subject were considered by a committee appointed directly by the Board of Trustees.

Artificial Limbs—The Council voted to reorganize its group of consultants and study the new prosthetic devices which have been placed on the market during and following World War II. The Council voted to prepare an article for publication on the subject.

Audiometers and Hearing Aids—The article "Tentative Standard Procedure for Evaluating the Percentage Loss of Hearing in Medicolegal Cases" has been published. The revised audiogram chart is ready for distribution. Twenty-six hearing aids were submitted and ten were accepted; the others are still undergoing consideration. Three audiometers were considered, but the consultants' reports on them are not complete.

Clinical Thermometry—This group of consultants is going forward with investigations of the problems of clinical thermometry, which involve more than the mere determination of the accuracy of clinical thermometers. The Council desires further information on various factors involving the use of the thermometers, as for example, the observational accuracy of a trained nurse, the accuracy expected by a physician, the manner in which the thermometers are used and the reliance which the physician is accustomed to place on the temperature readings.

Contraceptive Devices—Six devices were submitted during the year; one investigation was completed, and the report of acceptance appeared in THE JOURNAL. The remainder are still under consideration. The "Requirements for Acceptability of Contraceptive Devices" were revised and referred to consultants for action.

Education—The consultants noted with satisfaction that the American Board of Physical Medicine held its first examination for diplomates. Special study was focused on the training course for physical therapists. The Council has cooperated with the Council on Medical Education and Hospitals with regard to this problem and has maintained cordial relations with the American Congress of Physical Medicine.

Electrocardiographs—"Minimum Requirements for Acceptable Electrocardiographs" was published. Three instruments were submitted but none of the investigations of the consultants has been completed.

Electroencephalographs—A mimeographed copy of the "Minimum Requirements for Acceptance of Electroencephalographs" is being considered by the consultants.

Occupational Therapy—This group of consultants has continued its interest in the problems pertaining to occupational therapy and has so advised the Council.

Ophthalmic Devices—The article "Orthoptics—Second Paper" was published. At the annual meeting of the Council, it was decided that the consultant group was too large to work efficiently. The members were asked to aid in the selection of a new group of consultants.

Respirators—The article "Tentative Requirements for Acceptance of Respirators of the Cuirass Type" was considered and published. Four respirators have been considered on the advice of the consultants; one was accepted.

Roentgen Rays and Radium and the Medical Aspects of Atomic Energy—The medical profession, through the advice of this group of consultants, is being informed about the medical aspects of radioactive isotopes. Ointments containing radon were under discussion by the Council, but the evidence for their therapeutic value does not appear to be sufficient to substantiate the claims made for these preparations.

The Council office has prepared a number of exhibits for loan to state medical associations and scientific sessions of allied professions. The exhibit on "Medical Aspects of Atomic Energy" was particularly interesting to the members of the medical profession at large. Other exhibits have been prepared such as the physics of hearing aids and audiometers, artificial respiration and the general practice of physical medicine.

Council on Foods and Nutrition

One of its original functions, the review of advertising for accuracy of statements, constituted a major service of the Council on Foods and Nutrition to the profession in 1947. While it is obvious that the present quality of food advertising is vastly superior to that of a generation ago, it remains a very important duty of the Council to examine advertising claims in order to insure accuracy and to encourage continued general improvement. All advertisements for Council-accepted products are reviewed by the Council, and all other food advertising accepted by publications of the American Medical Association is passed on by the Advertising Committee, of which a representative of the Council is a member. Thus in 1947, as in the year of its organization, the Council continued to serve the members of the medical profession by weeding out unacceptable advertising copy and by the encouragement of those who produce accurate informative copy.

New Products Accepted.

In 1947 the number of new products accepted by the Council, including vitamin D milks, was one hundred and thirty-eight as compared with ninety in 1946. The number of pieces of general education copy accepted by the Council was more than twice that of the preceding year.

Vitamin D Milk Program

The Council's vitamin D milk program has been completely reviewed. On Jan. 1, 1948 Council-accepted vitamin D milks, all forms, numbered seven hundred and twenty-eight. A report was prepared concerning two of the major objectives of this program, namely, the encouragement of the wider use of vitamin D milk as a public health measure and the assurance of physicians and parents that as far as possible Council-accepted vitamin D milk regularly contains the number of units of vitamin D indicated on the container. Mimeographed copies of this report are available on request.

Council-accepted vitamin D bottled milks are sold in nearly every state, and it may be assumed that in practically all communities in the United States two or more brands of Council-accepted vitamin D evaporated milk or powdered milk are available.

The Council accepted two hundred and eleven different brands of evaporated milk to each of which is added 25 U.S.P. units of vitamin D per ounce. This is equivalent to 400 U.S.P. units per reconstituted quart.

Can the vitamin D potency of Council-accepted vitamin D milk be relied on to contain 400 U.S.P. units of vitamin D per quart or per reconstituted quart in the case of evaporated or powdered milk? This is a question of immediate interest to both medical practitioners and public health officers, who are concerned with the nutritional state of population groups. The recent survey by the Council indicated a total of less than 4 per cent of assays indicating fewer than 400 units of vitamin D per quart of bottled milk. Most of the unsatisfactory assays indicated only slightly fewer than 400 units per quart, while infrequently a report indicated that no vitamin D had been added. These data have significance, because assays are done on surprise specimens of milk taken without the dairyman's previous knowledge. It is believed that the vitamin D potency of Council-accepted vitamin D evaporated milk is consistently reliable.

When control of vitamin D potency in fortified milk is taken over by state or municipal health offices it is believed that the experience of the Council in voluntary control will be valuable.

Reexamination Of Accepted Products

The work of reexamining products which have been accepted for periods of more than two years is an essential continuing function of the Council in order to assure the physician, who relies on Council acceptance, that products once accepted will continue to be acceptable. This work proceeded at an accelerated pace in 1947. All the brands of iodized salt previously accepted by the Council were reexamined or are in the process of reexamination. Some of the foods used in infant feeding were also reexamined. It is hoped that this work may proceed at an even faster pace in 1948.

Potential Areas of Usefulness

The scope of the Council is such that within its purview come the special purpose foods and a few of the general purpose foods. The rapidity with which the knowledge of foods, nutrition and food technology is advancing indicates that the Council should increase the range of its usefulness and present reports to the profession on the nutritive merits of specific foods for which new methods of manufacture have been developed.

The effect on human subjects of the newer insecticides, fungicides, weed killers and other chemical substances which farmers are beginning to use must be viewed with a critical eye, and appropriate warnings must be passed on to physicians. Some of these substances adhere to the surface of the plant or may be incorporated in growing plant tissues, thus offering potential sources of injury to consumers of foods contaminated by such substances.

Appropriate also would be a review by the Council of some of the multitude of chemical substances which are annually being urged on the bakers of the country for the purpose of extending their shortening, making larger and softer loaves of bread and delaying staling and of many other agents intended to make processed foods appear more appetizing. The extent to which some of these substances have been investigated to rule out possible toxic effects is now only partially known. Active participation of the Council in consideration of these matters could assist the medical profession in the early identification and elimination of potential mass poisonings of greater or lesser severity.

Although there may be little reason for concern at this time, the contamination of foods with the products of nuclear fission is a subject which must not be overlooked as a potential area of Council activity. A large contribution to the University of Chicago's research project in nuclear physics by one of the large food manufacturers is an indication that at least some members of the industry are concerned with the potentialities of research in this field.

In the recent past physicians have been largely concerned with mineral and vitamin deficiencies in the diet. This interest will undoubtedly continue, and the concern of the Council in this field should expand in proportion.

The vast new field of study of the interrelationships between nutrients offers an intriguing and useful field of endeavor. Increasing knowledge in this field will assist in improved technics of individual and mass feeding. At the same time

that advances are being made in the field of nutrition, ground must not be lost by failure to watch carefully for potentially toxic substances which may be incorporated in foods because of ignorance and carelessness.

Nutrition Education

The new edition of the Handbook of Nutrition is nearing completion and should be ready for the printers by July 1948. Those portions which are of particular interest to the medical practitioner are being printed first in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

The study of nutrition teaching methods in schools of medicine has been continued by a committee of the Council. A report on the pilot study is anticipated in 1948.

Assistance was given to the Bureau of Health Education in the production of a series of transcribed educational radio broadcasts on various phases of the subject of foods and nutrition. Thirteen platters have been prepared for the series, each representing the discussion of an assigned subject by an expert.

As previously mentioned, the Council has started the publication in THE JOURNAL of individual chapters of the Handbook of Nutrition. The Council has also published reports and has assisted in the preparation of a considerable number of articles on nutrition. Assistance has also been given in the preparation of reports on educational motion pictures having to do with nutrition. The Council office has cooperated with the work of other departments at the headquarters of the Association and has in return been helped by them.

Public Relations

Good public relations rest squarely on work well done and services performed. This premise has guided the efforts of the Council Office, and until a better basis is offered it will continue to be the chief motivating factor in the Council's activity.

Council Meetings

During the year the Council met twice at Association headquarters. Some of the items of general interest taken up at those meetings were: nitrogen trichloride-treated ("agenized") flour; flour and bread enrichment; fortification of milk with vitamin A; the relative clinical effectiveness of vitamins D_2 and D_3; fortification of skim milk with vitamins A and D; criteria for establishing evidence of the clinical effectiveness of protein supplements; the use of vitamins in industry, and iodized salt.

Council on Industrial Health

Interest in the health and welfare of industrial workers remains at exceptionally high peacetime levels as expressed in current activity in the government, in business management, in labor and in the medical and allied professions.

Public Relations

International Industrial Health—The first postwar International Industrial Health Congress will take place in London in the late summer of 1948. Steps have been taken to assure representation from the American Medical Association. Such representation is important because of widespread interest in industrial health practices in the United States. During the past months representatives from almost all European and Latin American countries and from China, India and Australia have visited outstanding installations in this country. All these visitors have been greatly interested in the activities of the Council on Industrial Health and the ways in which an independent medical organization has attempted to improve the health of workers through professional education, organization and cooperation.

Governmental Industrial Hygiene—Government support of industrial hygiene probably stands at the highest levels yet attained during peacetime, both in Washington, D. C., and in many industrial states. The Division of Industrial Hygiene in the U. S. Public Health Service is receiving excellent financial backing, which in turn is reflected in expanding field services, greater help to industrial hygiene bureaus in the states, resumption of laboratory investigations on an expanding and intensified basis and the development of a program of assistance to educational institutions for the training of essential industrial health personnel.

Health Service for Federal Employees—Public Law 658 provides that government employees receive emergency treatment of on-the-job illness, preemployment and periodic health examinations, health counsel, referral to private physicians and dentists and a general program of preventive medicine. Surveys of health needs and available facilities have recently been completed in Denver, Kansas City and Chicago by the U. S. Public Health Service as required under this legislation. In each instance the investigation has been conducted after consultation with officers and appropriate committees of affected medical societies, who have been informed about the objectives of the program, the methods of survey and the final recommendations. For example, in Chicago thirty-two federal agencies employ 42,000 persons. The contemplated occupational health program will require thirteen physicians, six dentists, two or three engineers and seventy to eighty nurses working in one principal health center, two subsidiary centers and eighteen departmental health units. The total number of employees who may be affected by this law is indeterminate but may range from 2,500,000 to 4,000,000 persons.

Union-Sponsored Health and Welfare Programs—Growing concern by unions over the health of workers has been dramatized by the Welfare and Retirement Fund of the United Mine Workers of America. Actual and impending medical and hospitalization activities sponsored by unions or jointly supported and administered by labor and management will reach a substantial segment of the industrial population. Both the Council on Industrial Health and the Council on Medical Service have been keenly aware of these developments and their potential effect on medical services and relations.

The Welfare and Retirement Fund of the United Mine Workers continues to attract major interest because of the nature of financial support and the steps which have been taken to implement it. The appointment of a medical director, the selection of a Medical Advisory Board and the creation of a Health Services Division in the fund are successive steps already completed. The chairman and secretary of the Council on Industrial Health are both members of the Medical Advisory Board. The Health Services Division consists of physicians, dentists, nurses, statisticians and administrators. The main inspiration for activities largely springs from the famous Boone report, although separate and intensive studies have been made of individual union districts as a means for setting up pilot operations. The general intention has been to build on existing facilities and to improve rather than to replace them. Advice has been sought from all quarters having legitimate interest, particularly from government agencies, representatives of medical societies, health departments, voluntary medical service and hospitalization organizations and insurance companies. Considerable attention has been paid to rehabilitation during the period of negotiation between labor and the mine operators regarding activation of the fund. A number of badly neglected medical and surgical problems have been uncovered, and placed under the best available care.

Management Groups—The Chamber of Commerce of the United States has discontinued its Health Advisory Council, one of the subcommittees of which dealt with industrial

health. A series of conferences has recently taken place between officers of that organization and the American Medical Association to see how health activity might be improved through proper working relations, especially in local communities. Since local chambers of commerce have demonstrated reliability in promotion and extension of good and dependable industrial health programs, every effort will be made to maintain satisfactory liaison.

Small Plant Programs—There are at present a dozen interesting experiments designed to bring to small industry the same kind of industrial health services which formerly only large industry has been able to support. These projects are being conducted by county medical societies, medical schools and individual physicians. Acceptance by small plants indicates that a definite and substantial need is being met. Some physicians have been concerned about their ethical status in promoting services of this kind to small industry. The Council on Industrial Health has felt that if these plans are well understood by county medical societies and the objectives accurately defined, no serious ethical relationship is involved.

Professional Relations

Field Activities—As usual, field services have been mainly pointed at improving the effectiveness of committees on industrial health in the state and county medical societies. There is still great variation in levels of accomplishment. Many are doing excellent work, others are not. Regional conferences have been held, generally in conjunction with the Council on Medical Service. These regional meetings have been attended by physicians, industrialists, labor leaders and others as a means of stimulating interest in industrial health at community levels.

Salaries of Industrial Physicians—Lack of adequate remuneration is regarded as one of the serious obstacles to attracting able and talented physicians into industrial health work. A study of salaries paid industrial physicians is now under way with the assistance of the Bureau of Medical Economic Research. The Council feels that industrial medicine should be taken off the bargain counter and that, given proper compensation, professional experience should be as stimulating and attractive in industrial medicine as in other medical specialties.

National Emergency Medical Service—Because of unsatisfactory experience in World War II regarding effective use of industrial physicians, nurses and ancillary professional groups, and because modern warfare depends on industry, it is believed that effective liaison should exist between the Council on Industrial Health and the Council on National Emergency Medical Service. Steps have been taken to bring about this desirable relationship.

Occupational Medicine—The headquarters personnel of the Council on Industrial Health are collaborating with the Editorial Board of *Occupational Medicine* in the preparation of general news and comments, book reviews, abstracts of current medical literature and the acquisition of original articles. It is also planned to develop an editorial program reflecting medical relations in industry.

Eighth Annual Congress on Industrial Health—The eighth Annual Congress on Industrial Health was held in Cleveland in January 1948, just preceding the scientific program of the Interim Session of the American Medical Association. The hope that in this way more general practitioners would be attracted to the Industrial Health Congress was not realized. In other ways the meeting was successful, particularly the annual dinner which was attended by the entire membership of the House of Delegates and the officers of the Association.

Scientific Development and Education

Survey of Industrial Medical Education—Nearly all medical schools in important industrial areas have been visited during the past year to determine the extent to which industrial medicine is taught to undergraduates and the facilities available for postgraduate training. In general the results of the survey are most encouraging.

Residency Approval—Regulations governing residencies and fellowships in occupational medicine were approved by the Council on Medical Education and Hospitals and the House of Delegates at the Annual Session in Atlantic City, N. J., in June 1947. Since that time application forms have been prepared and sent to industries likely to be in position to supply training and experience of residency caliber. Certain elements in the requirements for approval need clarification, and additional conferences will be held from time to time to make essential adjustments.

Research and Scientific Development—During the past year an effort has been made to collect all available information about existing facilities for research on industrial health and likely sources of financial and technical support. Investigations in industrial toxicology, industrial physiology and psychology, administrative methods and human engineering are expanding in number and importance. They occupy a prominent place in the research activities of the armed forces, government agencies and universities, as well as the industries themselves. There is great need for coordinating machinery. The Council on Industrial Health is strongly disposed to undertake an activity of this kind, assuming that it can be done reasonably. An alternative suggestion would concentrate this form of service in the National Research Council, although it is not clear that that organization is prepared to do it. Meanwhile, the headquarters office of the Council on Industrial Health acts as a general clearing house for information of this kind as well as for data on industrial medicine and health.

Atomic Energy—Cooperative efforts are being made by the Council on Physical Medicine and the Council on Industrial Health to appoint consultants familiar with the uses of atomic energy in medicine and industry. The safe production of this kind of energy, whether in the manufacture of radioactive isotopes or the ultimate successful development of nuclear fission as a source of usable power in manufacturing and transportation is on all counts the greatest single industrial health consideration at present.

Aluminum in Pneumoconiosis—The joint investigation of aluminum in the prevention and treatment of silicosis is being continued by the Council on Pharmacy and Chemistry and the Council on Industrial Health. A final report will appear shortly, descriptive of the kind of controlled experimentation necessary to determine the usefulness of this substance as a therapeutic and prophylactic agent.

Workmen's Compensation

The National Conference Committee on Workmen's Compensation previously mentioned in annual reports of the Council has been dissolved and its essential activities transferred to committees in the International Association of Industrial Accident Boards and Commissions. Meanwhile, to preserve important contacts developed through this Conference Committee, the Council has requested permission of the Board of Trustees to set up its own group of consultants on workmen's compensation. In this way dependable relations can be maintained with the legal, administrative, insurance and technical groups interested in workmen's compensation.

Rehabilitation

The Council has retained its contact with official agencies concerned with rehabilitation. It has worked closely with the Federal Office of Vocational Rehabilitation, and the program of the agency has been brought to the attention of members of the medical profession through direct mail, at the Annual Congress on Industrial Health and at regional conferences. Contact has been maintained along similar lines with the rehabilitation service of the Veterans Administration. Members of the Council serve in advisory capacities to both these groups. The gap between effective rehabilitation and the institution of definitive treatment of industrial accidents is a matter of great concern both to compensation and to rehabilitation workers. The Council has under consideration an educational program which will

emphasize the need for far better integration of convalescent care and rehabilitation beginning as promptly as possible after the occurrence of an accident and continuing through the successive steps toward job restoration.

In 1945 Congress by joint resolution set aside the first week in October as National Employ the Physically Handicapped Week. Since then the President has appointed a committee to promote observance of this week. This committee is now sponsoring legislation which will make available $250,000 annually to be expended by the Secretary of Labor to promote the employment of handicapped persons and the work of the President's committee. There is serious concern that this amount of money will create an agency within the Labor Department that will duplicate services already available in the Federal Security Agency and the Veterans Administration. The Council is greatly interested in this proposal and will keep closely in touch with developments.

Council On National Emergency Medical Service

The House of Delegates of the American Medical Association at its Annual Session in June 1947 recommended to the Board of Trustees the creation of a standing committee of the Board to be known as the Council on National Emergency Medical Service. The Board of Trustees took the necessary action at its meeting on Sept. 4, 1947 to create this standing committee, and the following physicians were appointed to membership:

Dr. JAMES C. SARGENT, Milwaukee, Chairman.
Dr. RICHARD L. MEILING, Columbus, Ohio, Secretary.
Dr. WINCHELL McK. CRAIG, Rochester, Minn.
Dr. HAROLD S. DIEHL, Madison, Wis.
Dr. PERRIN H. LONG, Baltimore.
Dr. HAROLD C. LUETH, Lincoln, Neb.
Dr. STAFFORD L. WARREN, Los Angeles.
Dr. EDWARD L. BORTZ, Philadelphia. } Ex officio.
Dr. GEORGE F. LULL, Chicago. }

After several informal meetings of the Chairman, Secretary and others, the Council on National Emergency Medical Service held its organization meeting at Association headquarters in Chicago Dec. 11, 1947.

Organization

The Council is to act as a committee of the whole during regular semiannual meetings to be held during the first week in November and the first week in April. The Chairman is empowered to call special meetings if and when required. Between semiannual meetings the executive committee is to act in behalf of and for the Council, holding such meetings as may be required. The executive committee is composed of the Chairman, the Secretary, the ex officio members and one other member appointed by the Chairman for a period of one year.

The following subcommittees for the purpose of study of specific problems have been appointed by the Chairman: (1) Allied Health Agencies; (2) Professional and Lay Education on Special Weapons; (3) National Disaster Relief; (4) American Medical Association Directory Service for Emergency Use; (5) Regional and State Subcouncils, and (6) Scientific Exhibit.

The Council, with the sanction of the Board of Trustees, plans to meet with and to consult with the various agencies of the National Military Establishment as well as such other agencies, organizations and persons as may be interested in national defense.

Consultants

The following physicians have been appointed to serve as Consultants to the Council: Dr. James E. Paullin; Dr. Hugh J. Morgan; Dr. Hans H.F. Reese, and Dr. George M. Lyon.

Purpose

The purpose of the Council on National Emergency Medical Service is conceived to be the development of proper, logical and timely advice for presentation to the Board of Trustees of the American Medical Association with reference to the medical and associated problems involved in the mobilization of the nation's armed forces, industry, agriculture and civilian population in time of a national emergency. It is necessary, therefore, to make a continuous, planned and coordinated study of the numerous problems associated with the mobilization of the nation's manpower, resources and materials, and to maintain direct and continuous contact with other civilian and governmental medical and allied organizations and agencies as well as with those agencies and organizations involved or responsible for the planning and operation of the national defense in its broadest term.

Scope

An outline of the scope of the Council on National Emergency Medical Service follows:

1. National Defense Planning related to medical, health and sanitary services:
   - (a) Armed Forces:
     - (1) Medical personnel procurement program
     - (2) Reserve program in Army, Navy and Air Forces
     - (3) Medical officer ratio to military strength
     - (4) Industrial College of the Armed Forces planning
     - (5) Utilization of available hospital facilities in time of national emergency
   - (b) Civilian Population:
     - (1) General medical and health care of urban and rural population
     - (2) Medical and health problems in industry
     - (3) Consideration of medical education, research and special groups
     - (4) Plans for production, stockpiling and allocation of medical material and supplies
2. Liaison and joint planning with allied medical and health agencies regarding personnel, facilities and material required in time of national emergency
3. Distribution of medical and allied personnel in an all-out national emergency
4. Plan for national disaster relief program
5. Program of education with reference to the special weapon type of warfare (atomic bombs, rockets, bacteriologic warfare, chemical warfare, etc.)
6. Coordination with councils, committees and agencies of the American Medical Association for planned unified action in time of national emergency

Public Relations

All planned publicity and policy releases of the Council are channeled through the office of the Secretary and General Manager of the Association.

Activities

On Jan. 6 and 7, 1948, the executive committee of the Council held conferences in Washington, D.C., with the Secretary of Defense, the Chairman of the National Security Resources Board, the Secretary of the Navy and the Secretary of the Air Forces.

In response to invitations by the Council, representatives of the Departments of the Army, Navy and Air Force and of the Office of Selective Service participated in the regular autumn meeting of the Council held at Association headquarters Dec. 11, 1947.

The Subcommittee on Allied Health Agencies stimulated a survey of the medical colleges of the United States on the part of the Association of American Medical Colleges and the Council on Medical Education and Hospitals to evaluate the various proposals for increasing the enrolment of medical students in time of peace and in time of emergency.

The Subcommittee on Professional and Lay Education on Special Weapons proposed to the Atomic Energy Commission and to the Secretary of Defense the training by observation of a select group of physicians chosen from metropolitan and strategic areas in the medical aspects of the use of atomic weapons.

The Subcommittee on National Disaster Relief conducted a poll of the governors of the forty-eight states and of the territories with regard to the present status of the state disaster service in each state. At the same time the respective state medical associations were advised of the action taken.

The executive committee of the Council has prepared an answer to a request of the Committee on Civilian Components, Office of the Secretary of Defense, for "the views of the American Medical Association on the subject of the organization and training of the civilian components of the Army, Navy and Air Force."

Spring Semiannual Meeting

The regular spring semiannual meeting of the Council was held in Chicago April 5 and 6, 1948. This meeting, falling as it did at a time of great public and professional concern over the deteriorating international situation, was of great importance, and many of the general officers, members of the Board of Trustees and directors of Councils and Bureaus of the Association participated. Representatives also were invited and appeared from thirteen national allied medical and health organizations.

The meeting was devoted to three half-day panel discussions followed by a final half-day business session, which was open to and was attended by a large number of the state associations' representatives. There were panel discussions on medical aspects of special weapons warfare; civilian medical, health and sanitary problems in a national emergency and the programs of governmental and civilian agencies to meet them, and medical, health and sanitary problems of the military establishment in the event of a national emergency. The panels were participated in by members of the Council and representatives of the Veterans Administration, the National Academy of Sciences, the Society of Medical Consultants of World War II, the American National Red Cross, the National Security Resources Board, the Departments of the Army, Navy and Air Force, the U.S. Public Health Service and the Office of Selective Service Records.

The proposed program of the Office of Selective Service Records, outlined before the Council, includes plans to revive the medical examination of inductees at draft board level such as prevailed throughout World War II. Since this program is intended to prevail under peacetime operation of the proposed Universal Military Training law and fails to carry a provision for remuneration to physicians who serve the local examining boards, the Council believes that there should be a determination of the policy of the American Medical Association on the question of remuneration for medical examinations at Draft Board level.

In the course of the semiannual meeting an informal conference was held with representatives from the thirteen national medical and health organizations that had been invited to participate. Much discussion centered about the many phases of national defense of common interest to these organizations and about the need for cooperative planning and joint action. The council favors the establishment of a liaison agency for joint national defense planning by and between the American Medical Association and the Advisory Board for Medical Specialties, American College of Physicians, American College of Surgeons, American Dental Association, American Hospital Association, Catholic Hospital Association, American Protestant Hospital Association, American Nurses Association, American Pharmaceutical Association, American Public Health Association, American Veterinary Medical Association and Association of American Medical Colleges.

The National Security Act of 1947 was enacted shortly after the House of Delegates approved the creation of the Council on National Emergency Medical Service in June 1947. The act provides for the establishment of a National Security Resources Board to consist of certain stipulated cabinet members together with heads of federal departments and agencies to be added at the option of the President, the board to be charged with the mission of advising the President regarding the coordination of military, industrial and civilian mobilization. The Departments of the Army, Navy and Air Force have suggested the establishment of a National Emergency Medical Board as an agency of the National Security Resources Board to include representation from the American Medical Association; the Council on National Emergency Medical Service urges that all possible effort be expended by the Association, including the immediate enlistment of the efforts of other medical and health organizations, to the end that such a National Emergency Medical Agency be appointed within the structure of the National Security Resources Board.

The Council was informed at its meeting in April that the director of the Civil Defense Sector of the Office of the Secretary of Defense will in the immediate future appoint a medical advisor and desires that this advisor be provided with both military and civilian medical consultants, one of whom would represent the American Medical Association. The Council recommends that early consideration be given to the selection of an appropriate representative.

A bill dated April 3, 1948 to provide for the common defense by increasing the strength of the armed forces of the United States and for a universal military training program is at present before the Senate Committee on Armed Services. In making special provision for the drafting of physicians up to the age of 45 years this bill, in the opinion of the Council, proposes a type of legislation that is on its face highly discriminatory and coercive if not actually unconstitutional. The Council believes that the recent wartime requirements of medical military personnel were met promptly and more than adequately by the patriotic response of the members of the medical profession without the necessity of any such compulsive legislation and that the experience of the recent war years served to bring into sharp focus the great danger that would lie in investing in the military establishment, rather than in a proper civilian board, the important functions of determining the relative needs of the military establishment and the civilian population and of distributing the limited medical manpower of the nation to meet those needs in time of war or the threat of war. It is therefore the considered opinion of the Council on National Emergency Medical Service that immediate action should be taken committing the

American Medical Association in opposition to Title I Sec. 105 (0) of the proposed bill, and that all possible effort should be expended, including the immediate enlisting of the efforts of the American Dental Association and all other organizations vitally interested in the nation's health, to expunge such discriminatory elements from this or any other proposed legislation relating to the drafting of the medical manpower of the nation for military purposes.

Through its conferences and deliberations, the Council on National Emergency Medical Service has arrived at certain conclusions which it believes might be accepted as basic principles to govern the American Medical Association and all who represent it in the medical, health and sanitary aspects of national defense and the expansion of the military establishment under the threat of a national emergency. These principles are:

1. The medical manpower of the United States is a resource vital to the life of every man, woman and child in the nation. It is a resource fixed in quantity beyond the possibility of rapid expansion.

The services of physicians must be carefully conserved and judiciously allocated in time of war to insure adequate medical, health and sanitary care for all Americans, whether in or out of uniform.

2. An extremely broad and painstaking survey of the use made of medical manpower within the military establishment during World War II revealed a substantial overprocurement of civilian physicians by the military establishment. Call-up to duty long in advance of need, the medical overstaffing of units, prolonged periods of complete inactivity in pooling areas and inordinate delay in separation from service are wasteful of medical talent and can be greatly minimized by improved logistics, by air and other rapid transport and by more fluid interchange of medical officer personnel between branches of the service. Protracted military indoctrination and assignments to strictly nonmedical duty should be completely eliminated.

Substantial reduction in the medical personnel requirements of the armed forces over that employed in World War II can be accomplished and medical health and sanitary care of the services actually improved by better use of the medical talents of medical officers.

3. Great wastage of medical talent is involved in duplicating the physical examination of inductees at the draft board and recruiting centers and again in reception centers.

A single physical examination of recruits and inductees should be made to suffice.

4. In the light of the experience of those countries suffering the effects of serious bombing during the last war and giving heed to the threat of the atom bomb, the need of planning adequately for the medical health and sanitary care of the civilian population becomes a matter of first magnitude since the very life of the nation may hinge on it.

It would be completely unsafe and a serious threat to our national war effort to lower needlessly the ratio of physicians to civil population anything like the 1 to 1,500 ratio reached during the recent war.

5. The making of a physician requires long, unbroken years of instruction and training. The periodic annual graduation of the usual class of new physicians could not be allowed to pass a year or two without seriously threatening the national health for a generation. Especially is this true if war is to deplete the ranks of the profession.

The deferment of properly selected and duly registered premedical and medical students together with a staff of essential teachers is absolutely necessary to the future health of the nation. The same holds true for scientists engaged in important medical and allied research.

6. The present civilian medical component procurement programs of the several branches of the military establishment are highly competitive, closely confined to areas of medical teaching and research and completely unrelated to one another or to the need for deferment from military duty of the personnel they seek to enlist.

There is great need for interservice coordination in the procurement of reserve medical officers and for avoiding recruitment among essential teaching and research personnel.

7. In the event of war or the threat of war requiring medical personnel in numbers beyond those voluntarily enlisting, whatever the program of procurement of additional physicians may be, that program should in all fairness take into account the obligation that students, deferred and taught at public expense during the recent war years, have to their government and it should take into account the sacrifices already made by those physicians who served during the recent war.

Except as age, infirmity or absolute irreplaceability may forbid, the call to military duty should be in the following order of priority:

(a) Those recent graduates who were enrolled in A.S.T.P. or V-12 programs who have not completed their obligated tours of duty as medical officers and all others who were deferred by Selective Service to continue their medical education; (b) other physicians who did not serve in World War II, and (c) those physicians who served the least in World War II.

8. During the recent war many physicians were required to spend four, five and six years of their lives separated from their families and completely dislocated from their practice. At the same time many able bodied physicians without important reason to be excused from service remained at home to reap the rich harvest of an expanded practice.

In the event of war or threatened war requiring the procurement by the Military Establishment of medical officers from civilian life, provision should be made for their replacement after a reasonable tour of active duty by others from civilian life.

9. Within the limits of administrative possibilities, civilian physicians drawn into the Military Establishment should be rotated between combat and rear areas in an equitable manner.

Bureau of Health Education

The year 1947 was anticipated as a postwar year when many of the difficulties due to war might reasonably be expected to have been overcome. Actually it was one of the most difficult years the Bureau of Health Education ever has experienced.

Personnel

The greatest difficulty experienced during the year was the personnel problem. To fill the vacancies which occurred during 1947 it was necessary to obtain twenty-four new employees, of whom sixteen left during the year. In addition to a ruinous turnover, which implies frequent and prolonged vacancies and much loss of time training new employees, it was necessary to replace one full time man with two college boys, each working half time. All this has greatly handicapped the work of the Bureau and thrown a severe burden on the steady and reliable employees.

The Director of the Bureau was the recipient of the 1947 Elisabeth Severance Prentiss Award for Outstanding Achievements in Health Education, given annually by the Cleveland Health Museum. The award was presented at the annual civic luncheon of the Museum at Cleveland, Nov. 17, 1947. The award consists of a bronze plaque and a certificate. The presentation and response were broadcast on a nationwide network of the Mutual Broadcasting System.

Bureau Publications

The Bureau reviewed twenty-four books for THE JOURNAL and twenty-one for *Hygeia*, and prepared thirty-two other contributions to THE JOURNAL in the form of editorials, radio announcements, articles and news items, as well as seventy-four for *Hygeia* such as manuscripts, questions and answers, items for Mothers' Column and for Teachers' Helps. Eight news items were submitted for the Secretary's letter.

The Bureau originated forty-two articles which were published in periodicals other than those of the American Medical Association. Advice and consultation on manuscripts was furnished five organizatoins.

Radio

The year 1947 marked the greatest activity of the Association in radio and was notable for a fundamental change in policy.

Network Programs—In addition to the usual network broadcasts on the National Broadcasting Company, the Association provided for two additional network programs, one on the Mutual Broadcasting System and the other on the American Broadcasting Company. The American Broadcasting Company negotiations failed, but a program was established with Mutual, opening February 17 and continuing past the end of 1947.

The Mutual Broadcasting System program, "Stephen Graham, Family Doctor" was broadcast on Sundays at 2 p. m. Eastern standard time during most of its run. Despite the fact that it was a program of high quality and broadcast at a relatively favorable hour, it attracted little audience mail and relatively little comment which was relayed back to the office. When the original twenty-six weeks ran out, the program was extended another thirteen weeks by use of the funds intended for the American Broadcasting Company broadcast, which meanwhile had failed to materialize.

The fundamental change in Association policy consisted in making the network broadcasts of the Association available for commercial sponsorship. Following is the list of acceptable sponsors:

1. Automobile manufacturers, dealers or trade associations.
2. Oil and gasoline manufacturers, dealers or trade associations.
3. Furniture manufacturers, dealers or associations.
4. General merchandising organizations, exclusive of foods, drugs or cosmetics.
5. Life insurance companies or associations.
6. Lumber and building supply companies or associations.
7. Railroad, aviation, bus, steamship or other transportation associations or companies.
8. Book publishers, particularly of medical books.
9. Builders, contractors and building material organizations.
10. Trade associations, not specifically named, except those having to do with food, drugs, cosmetics, pharmaceuticals, biological or surgical supplies, tobacco, alcohol or finance.
11. Accident, health, fidelity and other insurance agencies, companies or associations.

The authorization for commercial sponsorship came when the National Broadcasting Company series was almost finished. The Mutual series was extended thirteen weeks by the Association and six additional weeks by Mutual in the hope of making a sale. It appears, however, that selling the American Medical Association program is not going to be simple. The sponsors with a natural interest in the program are excluded for policy reasons, since it seems inadvisable to enter into a commercial radio agreement with any commercial organization whose products or services might come before any of the Association's scientific councils for acceptance, review or criticism. Many of the most desirable sponsors, from the point of view of the Association, have existing radio contracts which will not soon be terminated.

Radio Transcriptions—The electrical transcription activity now grows without stimulation. The large number of broadcasts indicates the interest taken by local agencies in the platter service. During 1947 the American Federation of Musicians announced the termination of musicians' services for recordings as of Dec. 31, 1947. This necessitated the making of a series with music in December which normally would have been made in 1948. The "Radio Handbook" produced in 1946 has had wide distribution and is proving exceedingly useful.

Special Broadcasts—Under the direction of the Bureau of Health Education, eight network programs connected with the Centennial Celebration of the American Medical Association at Atlantic City, N. J., were broadcast during the week June 7 to 14. Great interest was evidenced in the Centennial religious observance program broadcast over the National Broadcasting Company's network on Sunday, June 8, by Msgr. Fulton J. Sheen, Rabbi Joshua Loth Liebman and Dr. Ralph C. Hutchison. A reprint containing the three sermons was made available by the Bureau of Health Education in response to numerous requests. The sermons were also made available on phonograph records in an album, of which twenty sets were distributed in 1947.

Three radio programs were broadcast by staff members of the Bureau in local areas where they attended meetings.

Special Award—At the seventeenth Institute for Radio in Education held at Ohio State University the eleventh American Exhibition of Education Radio Programs was sponsored. The American Medical Association program, "Doctors, Then and Now," received the first award in its classification, Broadcasts by National Agencies. A previous Institute awarded a similar honor to the American Medical Association—National Broadcasting Company program, "To America's Schools—Your Health," in 1938.

Television

This health education activity of the Bureau was continued with resumption of program presentation in the late fall of 1947. During the summer, a "Television Handbook" was prepared and issued by the Bureau. In this the possibilities of television as a medium for health education were considered and twenty-eight programs presented by the Bureau were summarized. On resumption of this activity, weekly presentations were inaugurated in place of the original once-every-two-weeks plan. During 1947 the majority of the programs were in the nature of "spot" news presentations. Material for these was taken from the weekly clip sheet published by the Association. The technic involved utilization of an appropriate film background for orientation of the viewing audience. In some instances sound films were used, while in others special scripts were prepared to be read over the silent film. This was given added variety by introduction of discussion between the television master of ceremonies and a physician to simplify as much as possible the technical aspects of the medical subject. Included among subjects presented in this way were rabies, anthrax, cancer, brucellosis, cost of medical care, child health care and the plight of the Navajo Indians.

Hygeia Loan Collections

A further slight increase in requests for *Hygeia* loan collections prepared by the Bureau of Health Education was observed. Eighty-seven such collections were sent out during the year as compared with eighty-two in the previous year. During the year the entire set of loan collections, dealing with fifty-five different health education subjects, was revised and reorganized extensively. The trend away from physician utilization of this service was reversed in 1947. Requests for loan collections came from fifty-eight physicians, whereas only thirty-eight physicians employed these in 1946. This can be construed as encouraging evidence that local civic organizations are recognizing more fully the importance of the physician as a source of reliable health information for the general public. Twenty-one requests came from lay persons working in the field of health education, and eight were received from nurses. The loan collections were sent to twenty-five different states and to Canada. Subjects most in demand were outstanding medical advances, cancer, alcohol and tobacco, progress in preventive medicine and sex education.

Health and Fitness

The end of 1947 marks the first full year of operation of the Health and Fitness Division within the Bureau of Health Education. The establishment of this work as an integral part of the functions of the Bureau of Health Education was an added step forward in the efforts of the American Medical Association to contribute to the promotion of health.

While the Division has been concerned with health and fitness problems of the preschool child, the school child, college students and adults, it has become increasingly evident that the most productive avenue of approach is to be found in working with those groups concerned with the health and fitness of the school child. The source file which was prepared as one of the first assignments of the Consultants, Drs. Dean F. Smiley and Fred V. Hein, has continued to grow and develop. Many organizations and agencies, including state departments of education and state departments of health, are now making it a regular policy to send copies of new materials to the Division to replace those within the files of the Bureau.

Correspondence related to problems in the development and expansion of health and physical education now comes regularly to the Division from nearly all the states. A considerable portion of the Consultants' time is required to answer such inquiries and to review materials concerned with curriculum planning and program development in the areas of school health and physical education.

A series of "Suggested Discussion Topics for Teacher Aids" to accompany each issue of *Hygeia* are prepared. These materials are being widely utilized in connection with the use of *Hygeia*, The Health Magazine, as a source aid for health education in the secondary schools. A

considerable number of films and other audiovisual aids for use in school health and physical education instruction are reviewed.

Legislation relative to school health and physical education was studied and the proper department of the Association advised in regard to the nature and content of projected bills. With the approval of the Board of Trustees, the Consultants have participated in the work of many committees as members or otherwise.

A series of thirteen radio transcriptions on health and fitness under the title, "That Wonderful Feeling," prepared late in 1946 is continuing to be widely used by state and local medical societies and other groups having the approval of the medical society. Three television programs on health and physical education were broadcast over station WBKB during the year. A brochure entitled "Teacher Aids" for use in connection with the "Health Heroes" series—transcribed radio programs—was prepared. Over a thousand copies have been distributed, and the material is being used in a comprehensive statewide program in Tennessee.

The Consultants participated in working sessions, gave talks at health and physical education conferences or other group meetings in twenty states during the year. These meetings included those of state and local departments of health, medical societies, education departments, medical auxiliaries and combined meetings of these and other groups. In October a Conference on the Cooperation of the Physician in the School Health and Physical Education Program was held at the Moraine Hotel, Highland Park, Ill. State departments of education, state departments of health, state education associations, state medical associations and national voluntary health agencies were invited to send delegates to the meeting. One hundred and twenty participants, representative of some ninety agencies or organizations, came from thirty of the states and one of the territories to attend the Conference. Twenty-six consultants drawn from the fields of public health and public education and the professions of medicine and education acted as discussion leaders. The purposes of the Conference were (1) to develop plans for implementing within the various states the health service provisions of the report, "Suggested School Health Policies," made in 1945 by the National Conference for Cooperation in Health Education; (2) to provide for interchange of information regarding the patterns of school health programs and the results of school health studies being carried on in various states; (3) to define the role of the physician in relation to the health aspects of school physical education and athletics, and (4) to suggest practical methods for providing preservice and inservice education programs for school health personnel. It was judged desirable to direct the work of the Conference to pointing up practical ways and means of carrying out recommended policies at state and local levels.

Drs. Smiley and Hein contributed material to the revised edition of "Health Education" published by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association and also edited the manual "Health Appraisal of School Children." Dr. Smiley has been appointed to membership on the Joint Committee and elected as Secretary for the coming year. The report of the Highland Park Conference entitled "Physicians and Schools" is now in print. Numerous requests and orders for the printed report are being received.

A heavy schedule of engagements for participation as discussion leaders at state school conferences and regional conferences has been developed running through October 1948. Because of the schedules undertaken and the limited time available, some invitations to participate in similar meetings have had to be refused. It appears wise at this time that the Consultants direct their limited efforts in this vast field of health and fitness to those areas where there is already organization which will make possible the most direct and immediate action. Through school and college contacts almost one third of the population can be directly influenced. At this level the work is especially fruitful, since the groups concerned will include the future parents and community leaders.

Pamphlets

Fifty-three new pamphlets were added during the year to the Bureau's list of publications, ten were completely revised and redesigned, twelve were revised in text and sixteen were discontinued. Distribution of Bureau publications through the Order Department was 256,725, and 46,450 reprints were sold directly to quantity purchasers, making a total of 303,175.

Before being reordered, each pamphlet is evaluated and then discontinued or revised, as recommended. For example, all five of the popular sex education pamphlets by Dr. Thurman B. Rice were revised. Two mental hygienists at the University of Illinois were appointed to review this popular series of sex education articles. The Bureau then coordinated the resultant suggestions with the author's comments and recommendations for the next edition of each pamphlet.

Art work in the pamphlets was increased, both in those recommended for reorder and for new pamphlets, and typography was modified in accord with modern trends.

Bureau of Investigation

During 1947 the Bureau of Investigation continued to function in a fact-finding capacity and in the dissemination to interested persons and groups of information on "patent medicines" and quacks, on fads and faddists and on frauds, either of a medicinal or a cosmetic nature. Inquiries regarding cosmetics, however, were turned over during the latter part of the year to the secretary of the Committee on Cosmetics of the Council on Pharmacy and Chemistry.

On July 2, 1947 Mr. Bliss O. Halling, Acting Director of the Bureau, died suddenly. He had been assistant director from 1914 to 1942, except for the period when he served his country in the first World War. His position was not filled during the year. The work was, however, carried on by the clerical force under the guidance of Dr. Austin Smith, Secretary of the Council and Pharmacy and Chemistry. On Jan. 1, 1948 Mr. Oliver Field assumed direction of the Bureau. Plans are being formulated to expand the reporting functions, with the idea that this will result in increased use of the informational facilities.

Inquiries

Statistically, the Bureau performed in much the same manner as in the previous year. Approximately 3,400 letters covering 4,500 subjects, representing a slight gain over 1946, were answered.

The number of inquiries was about evenly divided as between physicians and laymen. Others included inquiries from better business bureaus, newspapers and periodicals, radio stations, governmental agencies, students and teachers. The ten subjects most often inquired about during 1947 were hair preparations, "obesity cures," cosmetics, "cancer cures," "diabetes cures," "aspirin," laxatives, vitamin preparations, "headache cures" and habit-forming agents.

The compilation of facts on persons and products is augmented to a certain extent by some of these inquiries. The Bureau constantly seeks authentic data on new preparations, new promotions, new departures from the field of ethical practice and new approaches by known charlatans in their appeals to ailing persons. Details of encounters with licensing or other regulatory officials on the part of such charlatans, which at times may be regarded as local news, are always welcomed.

Lay persons who believe they have "cures" for serious ailments frequently write the Bureau. During the year many such persons were informed of conditions imposed before consideration can be afforded such "cures." It is interesting to note that none ever supplies the evidence requested.

Cooperation With Other Agencies

During the year there was much cooperative effort in the exchange of information on nostrums, fakes, therapeu-

tically useless devices and other items of mutual interest with the better business bureaus and state and federal regulatory agencies having jurisdiction in such matters. Considerable assistance was given, also, to feature writers in furnishing material for magazine articles on quacks and nostrums. Much time was spent with advertising officials of newspapers and radio stations and others who requested information and criticism of "patent medicine" advertising before acceptance for publication in the press or for broadcast purposes.

Contributions to the Journal

In 1947 twelve columns of material were contributed to THE JOURNAL by the Bureau of Investigation. For the most part, the contributions included reports of regulatory actions by governmental agencies, particularly the Food and Drug Administration, the Federal Trade Commission and the Post Office Department, against persons and firms exploiting drug products without regard for the truth of the claims made.

Other Services

The Bureau's lantern slides and film strip dealing with the nostrum evil and quackery were still available to physicians and educators who might desire to use them. However, demand for these items appears to have decreased.

The Bureau seeks to widen its facilities in the matter of furnishing propaganda on quacks and nostrums. Members of the profession particularly, and the general public as well, are invited to use the constantly increasing sources of information and facts that have accumulated in the files of the Bureau. Physicians are urged to suggest to science teachers and others that the Bureau can assist them in furnishing facts for school or lecture use.

Bureau of Legal Medicine and Legislation

Since the last report of the Bureau of Legal Medicine and Legislation was submitted, one member of the staff, Mr. T. V. McDavitt, has been transferred to the Bureau of Industrial and Personnel Relations and the services of Mr. E. J. Holman have been secured as a replacement. Mr. Holman is a member of the Bar of the State of Kansas, a former member of the legislature of that state and a former judge of the City Court of Leavenworth, Kansas.

For a number of years there has been unnecessary duplication in the contents of the report of the Bureau and that of the Washington Office of the Council on Medical Service. Both have presented factual analyses of federal legislation of medical concern, resulting not only in a duplication but having a tendency to confusion, because the two reports have not always been considered by the same reference committee of the House of Delegates. After discussing the matter with the Secretary and General Manager, and with his concurrence, this report of the Bureau and future reports will omit the routine, detailed and factual analyses of medical bills in Congress, leaving such analyses to be presented in the report of the Washington Office of the Council. The Bureau will, however, submit special comments on particular developments in Congress as the occasion seems to justify.

Local Public Health Units

The House of Delegates has recorded its approval of federal aid to assist the states in the development of local health units. During 1947, several drafts of legislation were prepared for the Association of State and Territorial Health Officers anticipatory to the introduction in Congress of a bill to assist the several states in the development and maintenance of local health units organized to provide basic full time public health services and to assist the states in the training of personnel for local health unit work. In the fall of 1947 a draft of this legislation was considered by the National Congress of Parents and Teachers at a meeting held in Washington, D. C. Following this consideration, the draft was approved by that organization. At this same meeting, that association adopted resolutions committing itself to a vigorous campaign to promote the enactment of the legislation. The National Congress of Parents and Teachers has appealed to the American Medical Association for its support.

On February 20, Senator Saltonstall, of Massachusetts, for himself and for Senator Cordon, Oregon, and Senator Hill, Alabama, introduced bill S. 2189 based on the draft prepared for the Association of State and Territorial Health Officers and approved by the National Congress of Parents and Teachers. To the extent that this bill will provide federal aid in the development of local health units, it conforms to the policies adopted by the House of Delegates. It would authorize the appropriation annually of as much federal money as is necessary, which will be allotted to the several states that have developed plans and submitted them to the Surgeon General of the United States Public Health Service for his approval. Attention should be directed, however, to the fact that the bill as now phrased gives no assurance that the local health departments to be developed under it will not provide care for the sick. A local public health unit within the meaning of the bill is defined to mean a governmental authority of a local area authorized to provide in such area "basic public health services." (Sec.(3) (d). Another section of the bill, Section 5 (b)(4), permits the Surgeon General of the Public Health Service by regulation to prescribe the "types of health services" which shall be considered basic public health services. Before taking this action, the Surgeon General will be required to consult with a conference of state health officers, but he is not required to accept the recommendations of such state officials. It is entirely within the realm of possibility, therefore, that the Surgeon General might define public health services in such a way as to embrace personal health services other than preventive. Such broad authority should not devolve on a federal administrative officer, and the bill itself should define what shall constitute such services.

Dr. Haven Emerson, chairman, Subcommittee on Local Health Units, Committee on Administrative Practice, American Public Health Association, has stated that the six basic functions of a local health department include:

1. Vital statistics, or the recording, tabulation, interpretation and publication of the essential facts of births, deaths, and reportable diseases.

2. Control of communicable diseases, including tuberculosis, the venereal diseases, malaria, and hookworm.

3. Environmental sanitation, including supervision of milk and milk products, food processing and public eating places, and maintenance of sanitary conditions of employment.

4. Public Health laboratory services.

5. Hygiene of maternity, infancy and childhood, including supervision of the health of the school child.

6. Health education of the general public so far as not covered by the functions of departments of education.

If S. 2189 were amended by adding a definition "basic public health services" to include the foregoing functions and to exclude "the care of the sick" as a function except when that care is necessary for the protection of the health of the community, the legislation would in principle, it would seem, conform to the policies adopted by the Association and would merit its support.

Inequities in Income Structure Pension Plans for Physicians

There is a growing concern over a number of inequities in the federal income tax structure affecting taxpayers engaged in a business or profession as sole proprietors or as partners.

1. It has been pointed out that it is possible for a taxpayer who operates a corporate business "to set aside in his years of productive activity to meet his requirements in the closing years of life. In most cases, he need only draw enough from the business to cover his personal living expenses plus personal income tax. The rest of the business earnings are subject to a corporate tax rate ranging from 21 per cent to 38 per cent, depending on the amount of earnings. This fairly modest tax is to be contrasted with individual income taxes which are payable under graduated rates attaining approximately 53 per cent at $20,000, 60 per cent at $30,000, 68 per cent at $40,000, and 84 per cent at $100,000."

It is not possible for certain groups, such as physicians, lawyers and dentists, to practice as corporations; hence, such groups are subject to the higher tax rates. It has been suggested that the Internal Revenue Code be amended to permit, in effect, these groups to take advantage of the lower corporate rates with regard to income derived from practice as distinguished from income derived from investment. This proposal has been referred to as the "Bard plan" and is now before the Eightieth Congress in the form of a bill introduced by Representative Church, of Illinois, as H. R. 5143.

2. Under the pension trust provisions of the Internal Revenue Code, a corporation within certain limitations may deduct in the computation of its federal income taxes sums expended in establishing a pension program for officers and employees. A partnership is accorded a similar privilege as far as employees are concerned, but the cost of a partnership pension program for the partners themselves is not deductible. Nor can a taxpayer in unincorporated business for himself set up a program to provide old age security after his productive years are spent and deduct the cost of it.

A proposal is being discussed for an amendment or amendments to the Internal Revenue Code to eliminate this inequity. No bill has as yet been introduced in Congress to put into effect this proposal.

3. A third suggestion has been offered which has become known as the "Silverson plan." This in effect will permit the taxpayer to purchase special government bonds up to a specified amount each year and deduct the cost in computing his federal income taxes. These bonds would be nonnegotiable and would be subject to redemption either at any time after the attainment by the taxpayer of age 60 or at any time after the death of the taxpayer and would be subject to income tax when redeemed.

These proposals have been discussed over a period of years with representatives of the American Bar Association and other national organizations and with the chief of staff of the Joint Committee on Internal Revenue Taxation. More recently, the Association of the Bar of the City of New York invited representatives of a number of national and state organizations to attend a conference in New York to explore further the desirability of proposing the suggested amendment. The invitation to the American Medical Association was received too late to permit its acceptance, but a second conference was called in February 1948 which was attended by the Director of the Bureau of Legal Medicine and Legislation and the Director of the Bureau of Medical Economic Research. Other meetings will be scheduled in the near future.

The Board of Trustees has recorded its approval in principle of the proposal that physicians practicing as sole proprietors or as partners be permitted, with deduction of costs in computing income taxes, to formulate pension programs for themselves, provided a reasonable ceiling be placed on the amount of pension. It is recommended that the House of Delegates voice a similar approval.

At its February midwinter session held in Chicago, the house of delegates of the American Bar Association, after referring to the tax inequities now faced by partners and sole proprietors in the matter of pension and other retirement plans, passed the following resolution:

> "RESOLVED, that the American Bar Association authorizes and directs the Section of Corporation, Banking and Mercantile Law and the Section of Taxation to study the subject and recommend a definite proposal or proposals to this Association, as soon as practicable."

The Bureau will contine to keep in close contact with this development, because it seems to have considerable merit.

Epilepsy and Automobile Accidents The Drunken Driver

At the Annual Session of the American Medical Association held at Kansas City, Mo., in 1936, the House of Delegates authorized the appointment of a Committee to Study Problems of Motor Vehicle Accidents. Such a Committee was appointed by the Board of Trustees and has functioned since that time in close cooperation with the National Safety Council and other agencies concerned with the prevention of accidents of this type. It has concerned itself, in the main, with the relation of the drunken driver to automobile accidents and has submitted a number of recommendations which have been approved by the House of Delegates. In its 1942 report to the House, the Committee did state that the presence of epilepsy should be sufficient reason for denying a license to a driver and that for practical purposes any person having a permanent condition which may cause temporary unconsciousness should be included in this category.

Prior to 1947, there were laws in only two states, California and New Jersey, requiring the reporting of epilepsy to motor vehicle departments. During the legislative year of 1947, legislation patterned closely after the California law was introduced in Indiana, Iowa, Kansas, Oregon and Wisconsin. It was enacted in Indiana, Iowa, Oregon and Wisconsin.

Correspondence by the Bureau with the American Association of Motor Vehicle Administrators last fall disclosed the fact that that association at its then last annual conference passed a resolution advocating the compulsory reporting of epilepsy. Copies of this resolution were sent to all member states with a copy of the California law, which was suggested as a model. The California law, in brief, requires all physicians to report to the local health officer in writing the name, age and address of every person who has a condition diagnosed as epilepsy or a similar disorder characterized by lapses of consciousness. The local health officer must report in writing to the state department of public health the name, age and address of every person reported to it as epileptic. The state department of public health is then required to report to the state department of motor vehicles the names, ages and addresses of all persons reported as having epilepsy by the physicians and local health officers. Such reports are declared to be for the information of the State Department of Motor Vehicles in enforcing the provisions of the Vehicle Code of California and must be kept confi-

dential and used solely for the purpose of determining the eligibility of any person to operate a motor vehicle on the highways of California.

The laws that have been enacted follow the California pattern in authorizing the state department of health to define the term epilepsy. The most recent definition that has come to the attention of the Bureau was formulated by the State Board of Health of Wisconsin and reads as follows: "An affection of the nervous system characterized by attacks of unconsciousness with or without convulsions." Unfortunately, there do not seem to be any dependable statistics indicating the relation between epilepsy and automobile accidents as compared with such accidents caused by other conditions, such as heart disease and cerebral hemorrhages. In at least two of the states in which legislation of this type has been enacted, California and Indiana, the action of the legislature followed an accident that was a tragedy in one instance, several persons being killed, and that resulted in a near tragedy in the other case.

It has been questioned whether a state department of health should be required to transmit to a motor vehicle department every report of epilepsy received despite the fact that some of the afflicted persons may not be eligible or applying for a driver's permit. As an alternative procedure, the suggestion was offered that the state department of health be required to maintain a card index file of reported cases which could be consulted as occasion demanded. The details of the suggested alternate procedure could be worked out, it would seem, to accomplish the objective without requiring an unnecessary disclosure of confidential information.

The Bureau has collaborated with the Committee to Study Problems of Motor Vehicle accidents in this matter and will continue to do so.

There has been no recent enactment of state laws providing for the admissibility in evidence of chemical tests for intoxication in connection with motor vehicle accidents where it is suspected that the driver at fault was under the influence of alcohol. In 1947 legislation of this type was introduced in Delaware, Florida and Ohio but failed of enactment. A similar bill is now pending in Virginia. All these bills embody the essential provisions of the uniform draft formulated by the National Safety Council, with the aid of this Bureau, several years ago and approved by the House of Delegates. Twenty-three court decisions have come to the attention of the Bureau involving the admissibility in evidence of chemical tests for intoxication. These have been included in a mimeographed memorandum which is available on request. One-hundred copies of it were recently sent to the National Safety Council for use by its Committee on Tests for Intoxication, on which a staff member of Bureau holds membership.

Abstracts of Medicolegal Cases

The Bureau has during the period covered by this report continued to provide THE JOURNAL with abstracts of court decisions of medicolegal interest. In 1932 the House of Delegates authorized the republication of these abstracts periodically in book form. Three volumes have been made available under this resolution. The publication of a fourth volume was contemplated in 1946, but due to a combination of circumstances resulting from the war a delay was unavoidable. The preparation of a fourth volume is now well advanced, and as soon as an adequate index can be completed it will be offered to the members of the medical profession. It will include the abstracts published in THE JOURNAL during the calendar years 1941 to 1946, inclusive. While books of this type do not have an extensive demand, they are unique in their field and constitute, it is believed, a definite contribution to the advancement of knowledge of medical jurisprudence.

A Journal of Legal Medicine

There has been an increase of interest in the field of legal medicine since the war, both in the United States and elsewhere. The Bureau has received recently a request for information that might be of assistance in the organization of a medicolegal department in the Ministry of Justice in Teheran, Iran. A similar request came last year from India, where the establishment of a Forensic Science Laboratory for the Government of the United Provinces is contemplated. From the Medical Defence Union of London has been received a communication asking the collaboration of the Bureau in exploring the desirability of promoting the establishment of a section in the World Medical Association for the discussion of matters of medicolegal interest. These appeals, including one from the chief legal advisor, Public Health and Welfare Section, General Headquarters, Supreme Commander for the Allied Powers, Tokyo, Japan, for assistance in the formulation of an anatomic act for that country, point to an accelerated interest abroad in this particular field.

Here in the United States there was recently held in St. Louis an American Medicolegal Congress under the auspices of the Board of Police Commissioners. The congress was extremely well attended and a number of excellent papers were presented. Much interest was also manifested in the creation of a national organization and in the publication of a journal of legal medicine. The enthusiasm with which these proposals were received, although no final action was taken on them, justifies a belief that the time is opportune for the Bureau in cooperation with the Association's Committee to Survey the Relationship of Medicine and Law to renew consideration of the desirability of promoting a national organization for the discussion of matters having medicolegal aspects and of the publication of perhaps a quarterly journal of legal medicine. The Director of the Bureau and the Chairman of the Committee have on several occasions discussed both proposals but have considered that conditions resulting from the impact of war made it inadvisable to arrive at definite conclusions. More recently, in February 1948, another conference was arranged between the Director and the Chairman, as a result of which a small group interested in the subject have been asked to meet in Philadelphia March 11 further to consider these particular proposals and to explore other avenues that might lead to better application in the United States of medical and allied sciences to legal determinations.

Exhibit on Prevention of Malpractice Suits

The Scientific Exhibit at the Centennial Session of the Association at Atlantic City, N. J. last year afforded space to a number of exhibits descriptive of the work of the various councils and Bureaus at the headquarters office. The exhibit of the Bureau of Legal Medicine and Legislation pictorially suggested courses of conduct designed to prevent or diminish the growing incidence of malpractice suits. This exhibit was well received at Atlantic City and has since been used a number of times at state medical association meetings. It is nonscientific but educational in character and may be obtained from the Bureau of Exhibits on request for state meetings.

Medicolegal Aspects of Artificial Insemination

Artificial insemination is a procedure that is creating considerable interest on the part of physicians, if judgment can be based on the number of inquiries received by the Bureau concerning it. The primary interest as reflected by these inquiries has to do with the legitimacy of the issue when the donor is a person other than the husband of the woman inseminated.

The extent to which artificial insemination is employed in the United States evidences the importance of the questions that are being presented. In an article published in THE JOURNAL for June 21, 1941, the authors gave the geographic distribution of some 9,000 children that had at that time resulted from artificial insemination, in 3,649 of which cases a donor other than the husband was used. These figures were compiled from answers to a questionnaire returned by 7,642 physicians. The question of legitimacy arises because the child, while born in wedlock, is the offspring of the woman and a man who is not her husband. Unless the child is legitimate the husband and his wife must look forward to adoption procedures after its birth to establish its legal status and rights. This course, however, would tend, as one writer has stated, " to destroy the secrecy so desirable in a case of artificial insemination " since " court records are open to all curious eyes."

The medicolegal aspects of this subject are being considered not only in the United States but abroad as well. Several years ago the Medical Defense Union of London, England, at one of its meetings heard a thoughtful paper on this subject presented by its secretary, Robert Forbes, M.D., Ch.B., J.P. More recently there appeared in the Paris letter in THE JOURNAL a statement to the effect that the problems of artificial insemination were being discussed in France by doctors, jurists, theologians and psychiatrists. In February of this year the Bureau received a letter from the Embassy of Sweden in Washington, D. C., indicating that the government of Sweden had recently appointed a committee to investigate the judicial and medical problems in connection with this procedure, with particular reference to the legal status of the child.

The questions that are being raised have not been adequately answered by any court. The Supreme Court of Ontario, Canada, in 1921 did undertake to discuss some of the aspects of artificial insemination but the discussion was by way of dictum not necessary for the decision reached in the case. A controversy arose in New York last year that afforded an opportunity for the court to remove some of the uncertainties of the legitimacy of the child born as a result of an artificial insemination. Briefly, a wife obtained a separation decree from her husband. The court in granting the decree permitted the husband the right to see at specified times a child born to the wife. The wife objected to the permission on the ground that the husband was not the father of the child, who was born following an artificial insemination. Unfortunately, the court in denying the wife's appeal for an amendment of the separation decree did not file a formal opinion. It did hold that the child had been "potentially or semi-adopted by the husband," that logically and realistically the situation was no different "than pertaining in the case of a child born out of wedlock who by law is made legitimate upon the marriage of the interested parties." The court expressed a disavowal of any intention of passing on "the legal consequences in so far as property rights are concerned in a case of this character."

It has been suggested that the enactment of legislation should be sought to legitimize the child resulting from an artificial insemination. Following the controversy in New York, a bill was introduced in the Senate of that State providing as follows:

> A child born to a married woman by means of artificial insemination with the express or implied consent of her husband shall be deemed the legitimate, natural child of both the husband and his wife for all purposes, and such husband and wife and such child shall sustain toward each other the legal relation of parent and child and shall have all the rights and be subject to all the duties of that relationship including the rights of inheritance from each other. This acts shall take effect immediately.

A similar bill pending in the Senate in Virginia contains the following phraseology:

> *Children Born as the Result of Artificial Insemination.*—Children born as the result of artificial insemination shall be considered the same as legitimate children for all purposes, if the husband of the mother consented to the operation.

The House of Delegates may well consider the advisability of endorsing in principle the enactment of legislation of this type.

The Bureau has carried on a considerable volume of correspondence with respect to artificial insemination dealing not only with the legitimacy problem but also with the responsibility assumed by a physician who selects or passes judgment on the fitness of a donor. There is under preparation at the present time a statement embodying available information on this subject, which will be produced either in mimeographed or printed form so that physicians may be more easily and promptly advised. Certainly, in artificial insemination the law must be applied to a novel situation and there are few court cases to serve as a guide.

Coroner-Medical Examiner Systems

Since the 1944 report of the Committee to Survey the Relationship of Medicine and Law concerning coroner-medical examiner systems was published, there has been a noticeable manifestation of interest in either the substitution of the medical examiner system for the coroner system or the modernization of the latter system to make it more effective.

The development that took place in Virginia in 1946 deserves particular comment because it may well set a pattern for other jurisdictions where for constitutional, political or other reasons the office of coroner cannot readily be abolished. The 1946 Virginia law had its legislative beginning in a Senate Joint Resolution passed by the General Assembly of that state in 1942, directing the Virginia Advisory Legislative Council to make a study and report on the advisability of abolishing the office of coroner and transferring the duties of the office to medical examiners and law enforcement officers. The Legislative Council, through a committee appointed by it, promptly initiated the study contemplated by the Joint Resolution. It contacted the Director of the Bureau of Legal Medicine and Legislation early in 1943 and was supplied with available basic data on the subject. The Committee to Survey the Relationship of Medicine and Law, through its chairman, Dr. Alan Moritz, gave continuous advice in the formulation of the draft of a bill that eventually was enacted into law. The Medical Society of Virginia collaborated closely in this study and in the formulation of legislation. In 1944 the Legislative Council submitted a report to the Governor and the General Assembly of Virginia as contemplated by the Joint Resolution. This report, however, did not recommend the abolition of the office of coro-

ner, as had been recommended by the Committee created by the Legislative Council, because of a belief on the part of the Council that the recommendations of the Committee would entail too much expense. The Council did suggest certain changes in the existing law, referred to in the report as "minor changes." Following the submission of this report, however, efforts were renewed on the part of representatives of the medical society of the state to develop legislation that would put into effect in Virginia an effective and modernized system for determining the cause of death in cases where crime is known or suspected to have occurred. These efforts bore fruit with the enactment of Chapter 355, Acts of Assembly, 1946. This law created a Commission on Postmortem Examinations, composed of the attorney general, the state health commissioner, the superintendent of state police, the dean of the Medical College of Virginia and the dean of the Medical School of the University of Virginia, all ex officio. This Commission is authorized to appoint a chief medical examiner for the state and to establish and maintain in Richmond, under the supervision of the chief medical examiner, a central office and a laboratory having adequate professional and technical personnel and physical facilities for the conduct of postmortem examinations and of such pathologic, bacteriologic and toxicologic investigations as may be necessary or proper.

The Commission is authorized, if it deem advisable, to enter into a contract with the Medical College of Virginia for the use of certain of its laboratories, its morgue and other technical facilities, and for space in one of its buildings as a central office for the chief medical examiner and his staff. In the discretion of the Commission, the chief medical examiner and his assistant may be made available to the Medical College of Virginia and the Medical School of the University of Virginia for teaching legal medicine and other related subjects. The Commission is authorized to appoint one or more coroners for each county and city in the state. Each coroner is to be appointed from a list of two or more licensed doctors of medicine submitted by the component medical society of the county or city in which the appointment is to be made, or of the district in which the county or city is located. Whenever the death of any person occurs from violence, or suddenly when in apparent health, or when unattended by physician, or in prison or in any suspicious, unusual or unnatural manner the coroner is to be notified by the physician in attendance, by any law enforcement officer having knowledge of such death, by the undertaker or by any other person present. On receipt of such notice, the coroner will take charge of the dead body, make inquiries regarding the cause and manner of death, reduce his observations to writing and promptly make a full report to the chief medical examiner. A copy of the report is to be sent to the appropriate Commonwealth's Attorney.

If in the opinion of the coroner or of the chief medical examiner it is advisable in the public interest that an autopsy be made or if an autopsy is requested by the Commonwealth's Attorney or by the judge of the circuit or corporation court of the city or county where the body is found, such autopsy will be made by the chief medical examiner or by such competent pathologist or toxicologist as may be designated by him for the purpose. It is declared to be unlawful to embalm a dead human body when any facts within the knowledge or brought to the attention of the embalmer are sufficient to arouse suspicion of crime in connection with the cause of death until the permission of the coroner is received. It is likewise declared unlawful to cremate the body of a deceased person until the coroner shall have certified in writing that he has viewed the body and made personal inquiry into the cause and manner of death and is of the opinion that no further examination or judicial inquiry concerning the same is necessary.

The foregoing represent some of the important provisions of the new Virginia Law. Its operation will be watched with considerable interest. Reorganization legislation introduced in the Virginia General Assembly in 1948, and which apparently will be enacted, will abolish the Commission and transfer its functions to the State Department of Health.

In 1947 the medical examiner laws of three states, Maine, New Hampshire and New Jersey, were amended in an effort to make them more effective. The Texas coroner law was substantially changed to improve it, and similar laws were variously amended in seven other states, Alabama, Arkansas, California, Delaware, Georgia, North Carolina and Pennsylvania.

Protection of Medical Research

In 1947 bills were introduced in a number of state legislatures and in Congress designed to impede or prohibit the use of animals in connection with medical research. Bills of this type made their appearance in California, Illinois, Massachusetts, Michigan, Nevada, Pennsylvania and Wisconsin. While some of these bills reached the hearing stage, none was enacted.

In Michigan in 1947 a law was enacted specifically recognizing the need for the utilization of animals in medical research and authorizing the state commissioner of health, aided by an advisory committee, "to regulate and to promulgate rules and regulations controlling the humane use of animals for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical and biological sciences, and the testing and diagnosis, improvement and standardization of laboratory specimens, biologic products, pharmaceuticals and drugs."

In New York in 1947 an amendment to the penal code was enacted which specifically authorized the state commissioner of health to approve laboratories and institutions in which scientific tests, experiments or investigations involving the use of living animals may be performed or conducted. The prior law authorized such experimentation only under authority of the faculty of some regularly incorporated college or university of the state, but the commissioner of health had no jurisdiction in the matter.

A number of years ago a staff member of the Bureau developed a draft of a uniform state law affirmatively to authorize the state department of health to approve institutions in which dogs could be used to promote research and providing for the transfer to such institutions of unclaimed impounded dogs. This draft was prepared at the request of the Secretary of the Committee on the Defense of Biological Research of the Federation of American Societies for Experimental Biology. More recently, the enactment of legislation of this type has been sponsored by the National Society for Medical Research.

There was introduced in Pennsylvania in 1947 a bill following substantially the draft prepared by the Bureau. It was not enacted. In 1948 the draft with some modifications was introduced in Massachusetts but favorable action has not as yet been taken on it.

State Legislation in General

The Bureau has continued its study of state legislation of medical interest. Through a legislative reporting service, it promptly receives copies of all such legislation. Brief comments are prepared on the more important bills for publication in THE JOURNAL. Each year a detailed summary is prepared of the important enactments, and this summary is also published in THE JOURNAL. The summary for 1947 was republished in the Bulletin of the Federation of State Medical Boards.

State medical associations are kept currently advised of proposals submitted to the legislatures of their states, and the services of staff members of the Bureau are available, on request, for aid in appraising particular bills. The staff personnel is also being utilized more and more by state medical associations in the development of adequate measures for the protection of health, covering a wide variety of subjects. The Bureau always welcomes the opportunity to be of help and wishes through the medium of this report to express its appreciation for the cooperation it has received from such associations.

Bureau of Exhibits

The Bureau of Exhibits administers the Scientific Exhibit at the Annual Session and Interim Session under the Committee on Scientific Exhibit of the Board of Trustees, presents medical exhibits at meetings of state medical associations and other scientific organizations, maintains health exhibits for fairs and expositions and cooperates with numerous organizations in the dissemination of information concerning graduate medical instruction and health education. Through the Committee on Medical Motion Pictures, leadership is being assumed in the use of motion pictures for teaching purposes.

The Bureau works in close cooperation with the other councils and Bureaus of the Association, preparing and maintaining exhibits for them.

The Scientific Exhibit—Centennial Session

The Scientific Exhibit at the Centennial Session in Atlantic City, N. J., was an outstanding testimony to the popularity of this form of graduate medical instruction. The huge crowds which thronged the aisles during the week extended to the utmost the facilities of the management and the endurance of the demonstrators. Nearly a thousand demonstrators participated in the Scientific Exhibit, and they deserve much credit for their patience and perseverance. Those persons who carried on during the entire week without a substitute to relieve them deserve special mention for their energy.

The significance of the occasion resulted in a large amount of historical material. A group of sixteen exhibits prepared by the Bureau of Exhibits depicted the activities of the Association over a hundred years and showed the work of all the Councils and Bureaus of the Association. Numerous other exhibits dealt with the history of many of the medical specialties.

The Special Exhibit on Fractures was as popular as ever, even though it has been shown at almost every Annual Session over a period of twenty years under the guidance of Dr. Kellogg Speed, Chicago.

The Special Exhibit on Physical Medicine, shown for the second time under a committee of which Dr. Frank H. Krusen, Rochester, Minn., was chairman, included physical therapy, occupational therapy and rehabilitation. Many of the demonstrations included the participation of amputees, hemiplegic persons and those with other disabilities. A platform was constructed in front of this group of exhibits to accommodate the crowds.

The Special Exhibit on Cardiovascular Diseases, organized by Dr. Paul Dudley White, Boston, contained the most inclusive group of exhibits ever presented on this subject. There were seventeen booths covering all phases, with demonstrators in constant attendance. In an adjoining area a question and answer conference on cardiovascular diseases was conducted by Dr. Edgar V. Allen, Rochester, Minn., with the cooperation of the American Heart Association.

The Special Exhibit on Fresh Pathology was presented by a group of competent pathologists, of which Dr. Frank W. Konzelmann, Atlantic City, N. J., was chairman. Specimens were brought in daily by messenger from Philadelphia, supplemented by material from the Atlantic City Hospital.

A group of exhibits on diabetes was arranged by Dr. Howard F. Root, Boston, the highlight of which was a question and answer conference in which outstanding authorities on diabetes participated. The audience filled this room to overflowing constantly throughout the week.

The seventeen sections of the Scientific Assembly each presented groups of exhibits dealing with the various specialties in medicine. These exhibits were selected, however, for their interest to the physician in general practice rather than the specialist. There were three hundred and forty-one applications for space, of which two hundred and twenty-seven were accepted—66 per cent. The largest group was that of the Section on Surgery, General and Abdominal, with twenty-six exhibits; the smallest, the Section on Anesthesiology with six exhibits. A representative to the Scientific Exhibit was appointed by each Section to assist and advise the Committee on Scientific Exhibit in the procurement and selection of material. The representatives gave freely of their time and energy in securing exhibits of exceptionally high caliber.

A miscellaneous group of exhibits included large displays from the United States Army, Navy and Veterans Administration, which were especially attractive.

There were twenty-nine awards, including six medals, eight certificates of merit, eight honorable mentions, six special commendations and one certificate of appreciation. The Committee on Awards, consisting of Dr. Max M. Peet, Ann Arbor, Mich., chairman; Dr. Arthur W. Allen, Boston; Dr. Francis G. Blake, New Haven, Conn.; Dr. William P. Herbst, Washington, D. C.; and Dr. Walter M. Simpson, Dayton, Ohio, performed a herculean task and submitted a report which received unanimous approval.

Motion pictures were shown in three theaters adjoining the exhibits. Ninety-five films were offered, of which sixty were selected after preview by competent authorities. Several of the films were shown in conjunction with exhibits on the same subject.

The Scientific Exhibit—Interim Session

The Scientific Exhibit for the Interim Session held in Cleveland in January 1948, was organized during the autumn months. A relatively short time was available for the task, which was performed in addition to the normal activities in connection with the Annual Session to be held the following June.

There were four groups of special demonstrations. These included the Cancer Detection Center, with an appointment center, an information center and a large group of exhibits presented by the American Cancer Society in connection; clinical demonstrations, conferences and exhibits on dermatology; a series of talks and conferences on diabetes as encountered in the general practice of medicine, illustrated by lantern slides and by patients and accompanied by a group of exhibits with laboratory demonstrations on the determination of blood sugar as a special feature and demonstrations on the conservation of hearing.

Provisions were made for sixty exhibits in addition to those accompanying special demonstrations. Thirty of these were new and thirty repeated from the Scientific Exhibit at previous sessions. All exhibits were selected for their interest to the physician in general practice. The different sections of the Scientific Assembly did not participate, nor were arrangements made for awards. There

were a considerable number of exhibits on industrial health in connection with the Congress on Industrial Health. Exhibits on physical medicine and rehabilitation covered many phases of that subject, with demonstrations by physically disabled persons. Other groups of interest included automobile accidents and resuscitation, nutrition, child health, treatment of burns and endocrine preparations. Motion pictures were shown in an area adjoining the exhibits, fourteen films being presented once each day.

Association Exhibits

The Association Exhibits depict the work of the various Councils and Bureaus at Association headquarters. During the year ten new subjects were added to the list and some of the old exhibits brought up to date. Other exhibits were discarded as no longer serviceable. The total available for loan purposes numbered forty-six at the end of the year.

Medical Exhibits—Fifty-seven medical exhibits were shown at thirty-two meetings of state medical associations and other scientific organizations, including dental, pharmacal and similar groups. A member of the headquarters staff was present at each meeting to install and demonstrate the exhibit, the Director of the Bureau of Exhibits attending many of the meetings personally.

Health Exhibits—The Association has prepared exhibits which are available on a loan basis for the public at fairs and expositions. Requests from groups other than medical societies are referred to the local state or county medical society for approval. Responsibility for installation and demonstration is borne by the organization which borrows the material. Seventy health exhibits were sent to twenty-six fairs and other gatherings of the public, including museums, during the year. Many of these exhibits were on display for several weeks or months, reaching hundreds of thousands of persons.

Numerous requests which are received for exhibits on certain specialized subjects cannot be complied with, or are referred to other agencies. There is also an incessant call from schools, women's clubs, nurses and health departments for small exhibits that are easy to handle and require a minimum of space to install. Such requests must of necessity be referred back to the state organizations, since the Bureau of Exhibits does not have the personnel or the funds to cover the many thousands of schools and small organizations in the country.

Museums

Museums, with their readymade audiences, offer opportunities for health education which should not be overlooked.

The Museum of Science and Industry in Chicago, with an annual attendance of 1,500,000 persons, has had on display a large amount of material from the American Medical Association for several years. Much of this has become antiquated and should be replaced at an early date. The Director of the Bureau of Exhibits, with the approval of the Board of Trustees, has assumed the duty of Executive Director of Medical Exhibits at the Museum.

The Cleveland Health Museum, devoted entirely to health purposes, has used much material from the American Medical Association, some on permanent display and some temporary. The Director of the Bureau of Exhibits is on the Advisory Committee of the Museum.

The Dallas Health Museum, which was organized recently, has called on the American Medical Association for a large number of exhibits. The Toledo Museum of Science makes a special feature of its health exhibits during the summer months, at which time exhibit material is sent from Chicago.

The question and answer service has been maintained at Cleveland and Dallas with the cooperation of the Bureau of Health Education. This service was discontinued at the Chicago Museum of Science and Industry, because the large number of questions received placed too great a burden on that Bureau.

Committee on Medical Motion Pictures

The Committee on Medical Motion Pictures is a subcommittee of the Bureau of Exhibits. The Committee is in constant touch with numerous other agencies interested in motion pictures in the United States, as well as in Canada, Mexico, Brazil, Great Britain, Australia, India and China.

Film Library—The film library was increased by nine titles during the year, making a total of fifty-two titles, of which there are one hundred and ninety-one prints. New copies were purchased to replace those which were worn out. Thirteen hundred and thirty-seven films were lent to hospitals, medical schools, medical societies and physicians. Civilian hospitals were the most frequent borrowers, with the Veterans Administration, the Army and the Navy using the pictures many times. Priority is given to requests from county medical societies, and these are increasing in number. Films were sent to forty-two states, the District of Columbia, Alaska and Mexico. While it is not the policy of the Association to produce motion pictures, one picture was made for use at the Centennial Session, entitled "The Medical Motion Picture—Its Development and Present Application." It has been well received both in this country and abroad. At the request of the British Medical Association and with the approval of the Board of Trustees, a copy was donated to it.

Film Reviews—Medical motion pictures made by physicians, pharmaceutical houses and institutions are submitted to the Committee on Medical Motion Pictures for review. Fifty-two reviews have been published in THE JOURNAL. These reviews are widely read and well received and constitute the most valuable contribution which has been made to the field of motion pictures. They will be published in booklet form, with supplemental issues from time to time.

Source File—A source file of all the medical motion pictures which are available for purchase, rental or loan, is in the course of preparation. The task is a gigantic one, and its completion will require considerable time. Numerous requests are received for information about films on specified subjects, and such a source file, kept up to date, is necessary.

Motion Picture Facilities—A survey of facilities to show motion pictures in medical schools and by medical societies indicated that such equipment is inadequate. Most medical schools use films to some degree in teaching, but few of them are properly equipped with sound and silent projectors. Thirty-two state medical associations use medical motion pictures in their meetings, while ten have no access to equipment. Information was not received from the remaining state associations.

Among eight hundred and five county societies, thirty own sound projectors, three hundred and twenty-nine others have them available and one hundred and thirty-three have no access to them.

The chief sources of medical motion pictures for both medical schools and medical societies are commercial and pharmaceutical houses.

Miscellaneous Activities

Members of the Bureau staff have been engaged in numerous conferences on matters pertaining to visual education with persons from the United States and foreign countries and have addressed meetings on many occasions. Members of the staff have also served on committees with various national and international groups.

Publications sponsored by the Bureau have continued to be popular. The second edition of "Fundamentals of Anesthesia" has been entirely exhausted, and the fifth edition of the "Primer on Fractures" nearly so. Pamphlets on "Medical Exhibits" and "Health Exhibits" have had a wide distribution. Mimeographed copies of articles on various subjects pertaining to exhibits and to motion pictures have been in constant demand.

Bureau of Medical Economic Research

The Bureau of Medical Economic Research was reorganized late in 1946, so that this is the first opportunity to prepare the annual report on a calendar year basis.

Publications

There are in the Bureau's files forty-eight publications which were produced between 1931 and 1946, when this department was called the Bureau of Medical Economics. Since the reorganization, the Bureau of Medical Economic Research has published twelve articles, copies of which are available to those who wish to order them. The following paragraphs describing some of these publications will provide a picture of some of the work that is being done by the Bureau:

Dividends from the Quest for Health, a brief analysis of the monetary value of longer life, appeared in *Hygeia* in January, 1947.

Fundamental Requirements of Insurance Applied to Voluntary Prepayment Medical Care Plans tests the voluntary prepayment plans against the fundamental requirements of insurance which have evolved during several centuries of insurance experience. A given economic risk is not insurable merely because it is important. The plans generally measure up to these time tested requirements of insurance. Reprints of the article and of an editorial which accompanied its appearance in THE JOURNAL have been requested by many managers of prepayment plans.

Medical Service Areas in the United States briefly reviews prevailing methods of marking off marketing areas without regard to county or congressional district boundary lines and states the reasons why the physician-population ratio per county is insignificant. This article proposes as a substitute a physician-population ratio per medical service area; such an area would circumscribe the communities where the patients live who are served by the physicians in the principal towns and cities of that area; it would be an economic, not a political area. In this connection the Bureau is making a study of medical service areas in the United States using well established technics of marketing research. The cooperation of the secretaries and executive secretaries of the state medical associations in this study has been very heartening. At the present writing it appears that there will be about a thousand medical service areas in the United States. Every person and every square mile of the United States will be located in a medical service area. The physician-population ratio of each area will be considerably more significant, though not ideal, than the traditional physician-population ratio for each county. It is hoped that the work will be so well done that statements citing the number of counties in the United States that do not have a physician will disappear from the literature of medical economics.

Medical Groups in the United States: In this publication the number of physicians who are members of groups is expressed as a percentage of the number of physicians in active practice. The percentage of physicians engaged in group practice indicates that group practice is relatively most prominent in Minnesota, California, Montana and the West North Central, Pacific and West South Central states and the least prominent in New York, New Jersey, Pennsylvania and the New England and Middle Atlantic states.

The Trend Toward Labor Health and Welfare Programs presents a brief review of the conditions, most of which grew out of World War II controls, responsible for the demand on the part of labor unions that provision for the health of union members be made by some kind of group insurance plan. Many of these plans are provided in the union contracts negotiated with the employers.

Analysis of Questionnaire on Medical Care of Civilians During World War II. Late in 1946 the Bureau was assigned the task of assisting the then Committee on National Emergency Medical Service. About one-fifth of the time and funds of the Bureau during 1947 were devoted to an analysis of certain aspects of medical service during the war. This analysis and an editorial concerning it appeared in THE JOURNAL for March 24, 1947. Although the questionnaire was sent to less than 5 percent of the physicians who remained in civilian practice during the war, the returned questionnaires provided an excellent sample from a statistical point of view. The replies revealed that the patient load increased seventy-five percent between 1941 and 1944, that civilian physicians were rather favorably impressed with the work of the Procurement and Assignment Service, that more physicians could not have been spared from their communities for military service, especially from the smaller communities, and that an overwhelming majority favored the creation of a board to represent the medical profession with power to set policy for the utilization of all physicians in the event of another national emergency. A curious, unexpected and fortuitous result of having only 60 per cent of the physicians at home to care for the 91 per cent of the population which remained civilian was that the crude death rate of the American people in 1942 was at an all-time low. This "riddle of supply" is an effective answer to those who charge that there is an extremely grave shortage of physicians in the United States in 1948.

Analysis of Replies to Postwar Questionnaire. From the standpoint of effort alone, this was the outstanding publication of the Bureau during 1947. The Bureau analyzed the 26,000 replies to the postwar questionnaire, which had been sent to 50,000 discharged medical officers. The information obtained was very difficult to code but yielded extremely significant results. This study presents an insight into certain phases of the military medical history of World War II, and its scope is so great that an adequate summary can not be presented at this time. The continuing demand for copies of this publication has exceeded expectations.

Is Medical Care Expensive? The Bureau published this pamphlet in September. The expenditures of the American people for medical care for the period 1929 to 1945 were published by the United States Department of Commerce in July. Using this data the expenditure for medical care was compared with a number of other items of consumer expenditures. One important conclusion was that although medical care expenditures in dollars have risen rapidly in recent years, they actually constitute a decreasing percentage of the income as well as of the total consumer expenditures of the American people. In the seventeen years covered by these data medical care expenditures, expressed as percentages of these two national aggregates, reached their peaks during the depression years of 1932 and 1933. A great many leaders in medicine and hospital administration were laboring under the illusion that medical care costs had risen out of all proportion to the ability of the people to pay. The Director had the pleasing experience of destroying this illusion by helping these leaders to see the position of medical care expenditures in the general economic picture of the times. Lantern slides of the six charts in the bulletin have been furnished to more than half of the state medical association secretaries for use in their public relations programs. This bulletin also pointed out that the physician's share of the medical care dollar has declined from 32 cents in 1929 to 27 cents in 1945. The record of increasing life expectancy in the United States since 1929 indicates clearly that the people are getting more for their money now.

Four Punch Cards for Every Physician

As soon as the Bureau of Medical Economics Research began operations under the present Director, the International Business Machines at Association headquarters were put in its charge. The inventory of old punch cards was found to be defective and incomplete, and the Bureau was instructed to prepare a new and expanded set of punch cards on all living Doctors of Medicine in the United States, Canada, Alaska, Hawaii and Puerto Rico.

A unique serial number has been assigned to every living physician. Thirty blank numbers were provided between successive names to provide for new names. These serial numbers should be adequate for at least two decades. The serial numbers have been assigned in alphabetic order and permit the utilization of the maximum speed in operating the I.B.M. equipment. Forty of the eighty columns in the punch card are used to record certain factual information regarding the physician. The same information is punched into three cards. The other forty columns of the first card contain the doctor's first name, middle initial and last name with M.D. following the name. The first forty columns of the second and third cards contain his street address, if any, and town, postal zone and state. When the operation is completed, a fourth punch card will provide many important types of statistical information, will be added to the inventory and will become the basic tool of the Bureau for studying many problems of medical economics. When the inventory is completed, the American Medical Association will be able to furnish the Secretary of Defense in Washington within a matter of hours a complete list of all the living physicians in the United States together with information about each one of them which is punched into the cards. At the present writing there is some indication that the serial number used in this large operation may be utilized by other private and official agencies in close contact with the medical profession. The completion of this four punch card inventory will continue to constitute a considerable portion of the work of the Bureau through 1948 and well into 1949. The study of medical service areas cannot be completed until this punch card inventory is available.

Bureau Work for Others

Aside from the work of the Bureau for the Council on National Emergency Medical Service, the services of the Bureau have been made available to the other Bureaus, Councils and departments of the Association. During 1947 the statistical staff performed punch card and machine operations incident to the annual hospital survey for the Council on Medical Education and Hospitals, and plans are under way to perform the same operations for the Council incident to the State Board number of THE JOURNAL. Assistance has been given to surveys being made on medical motion pictures and on salaries of physicians in

industrial practice. A long study has been undertaken for Associated Medical Care Plans in which the first step is to prepare a columnar analysis of the more than 1,500 different phrases or provisions in the more than fifty-eight contracts issued by member plans to their subscribers.

The Bureau has exchanged punch cards with the Surgeons General of the Army and Navy. The ease of duplicating punch cards will clearly increase the usefulness of the punch card inventory and will require a reexamination of the relationship of the Bureau with inside and outside agencies.

The Bureau's study of group practice, designed as a continuation of the two earlier periodic surveys made by Dr. R. G. Leland, former Director, has been broadened pursuant to the adoption of the resolution on group practice by the House of Delegates at the Atlantic City Session in June 1947.

The Bureau has received a duplicate set of punch cards developed by the U. S. Public Health Service for its excellent study on group practice. That study, starting in 1945 and already reported in three published articles, has made it necessary to reexamine the plans for the Bureau's study in order not to duplicate unnecessarily the scope and coverage of their study.

The practice of sending each new pamphlet as it is printed to a number of persons in the health education field, discontinued during hostilities, was resumed in February.

This year the Bureau produced the Association's annual catalog of publications for public instruction and also a supplemental catalog of available mimeographed publications, hitherto unpublicized.

Cooperative Relationships

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association—The 1947 meeting of the Joint Committee was held, for the fourth consecutive year, at American Medical Association headquarters, May 12 to 15, 1947. Principal items dealt with by the Committee were as follows: Appointment of a subcommittee to explore possibilities for improving the work of and procuring financial support for the National Conference for Cooperation in Health Education; a report on an "Individual Height-Weight Record" and suggestions for its use by teachers and a report on a "Physical Growth Record"; a report on "A Nutritional Program for Schools"; the "Report of the Subcommittee on Standards for Determining the Health Status of School Children", and revision of the Committee's 1937 resolution on eye examinations of school children.

The term of Dr. W. W. Bauer, Director of the Bureau of Health Education, as a member of the Joint Committee expired in 1947, and the Board of Trustees of the American Medical Association appointed Dr. Dean F. Smiley, Consultant in the Bureau's Division of Health and Physical Fitness, to succeed him.

National Conference on Cooperation in Health Education—A meeting was held in Washington, D. C., April 10 to 11, 1947, at which it was reported that 42,000 copies of the report on the "Functions and Education of the School Administrator, the Physician and Nurse in the School Health Program" had been distributed. Six educational groups will be included in the initial planning for a new project of the National Conference, i.e., a statement of the "Functions and Education of the Classroom Teacher in the School Health Program." The preparation and publication of a pamphlet "The Nurse in the School" has been accepted as a project of the Conference, financing to be taken care of by the National Organization for Public Health Nursing. A minimum membership fee of $50 was decided on, and agencies who are able to make larger contributions are encouraged to do so.

American Public Health Association—Committee on Professional Education: This is one of the most important committees on which the Director of the Bureau is a member, since it is working toward objectives fully endorsed by the medical profession, namely, improvement of the public health by improving the qualifications and training of public health personnel. The committee meets about twice a year, including one meeting at the time of the annual convention of the American Public Health Association. This Committee has prepared reports on the qualifications of health officers, bureau chiefs, sanitarians and health educators and is working on other reports. It supervises the accreditation of schools of public health for giving the master's and doctor's degree in public health and directs the activities of the American Public Health Association's Merit System Unit and Placement Bureau. The Director has served two terms, the last of which will expire early in 1948. Association policy precludes reappointment after two successive terms.

Committee in Accident Prevention—This subcommittee is allocated to the Committee on Administrative Practice and has furthered accident studies and considered the publication of material in the field of accident prevention.

Committee (Illinois) for Estimate of Needed Health Educators—The Associate Director of the Bureau serves on this subcommittee of the Committee on Planning for Health Education.

American Cancer Society Educational Committee—This committee meets every month, usually in New York, and usually starts its meeting at 4:30 p.m. and continues it into the evening. For this reason it becomes necessary to spend two full days in New York at times when the use of planes is impossible. The Director has therefore been unable to attend many of these meetings. This committee is concerned primarily with professional education and has shown little interest in lay health education except for money raising campaigns for the American Cancer Society.

The Director of the Bureau also serves on the following committees: Executive Committee of the National Society for Medical Research; Advisory Board on Health Services, American Red Cross; National Committee for Traffic Safety; American Medical Association Committee to Confer with National Safety Council, and The President's Highway Safety Conference, Committee on Organized Public Support. The Bureau continues to cooperate, largely by correspondence, with a large number of government agencies.

Appreciation

The Director of the Bureau of Health Education wishes to express his appreciation to the Trustees and to the Secretary and General Manager for the opportunities for increased service made possible in numerous ways during 1947.

As usual, the Bureau has also enjoyed the cooperation of physicians outside Association headquarters. Special thanks are due those who cooperated in radio, television and transcription programs and who have furnished answers to questions and have helped us with advice and consultation. The Bureau appreciates the cooperation of other departments in the Association.

Bureau of Industrial and Personnel Relations

During 1947, the first year of operation of the Bureau of Industrial and Personnel Relations, study was made of the personnel administration needs of the Association. In the light of that study, of activities carried on in the past by the Association and of expanding experience, a plan of personnel administration was developed. This program obviously will be subject to future evolution and development as future appraisals and experience indicate. Appended to this report is a functional analysis of the Association's present personnel program. This program, with certain exceptions, is, or is proposed to be, under the direction of the Bureau of Industrial and Personnel Relations.

The personnel program is divided into four main divisions, with respect to both the office and the mechanical departments. These divisions are (1) employment; (2) wage and salary determination, sometimes referred to as wage and salary administration; (3) research and planning, and (4) employee relations. The first main division has, with respect to the office, five principal subdivisions, as noted in the appended analysis. The procurement of office personnel,

the screening of applicants for ultimate selection by a department head and the handling of exit interviews are activities not presently being carried on by the Bureau. Employee relations, the fourth main division, has a subdivision referring to certain employee services, namely, the administration of the program of the Association for its employees with respect to life insurance annuities and hospital and medical care. The employee services just noted are administered by the Comptroller of the Association entirely independent and apart from the Bureau.

endeavors in the plant and through industrywide cooperation, to the negotiation and settlement of wage scales. As to class 3, administrative, executive and professional employees not of top status, the Bureau will undertake future studies when adequate experience with respect to class 2 has indicated a course of intelligent, reasoned and proved conduct. The future course with regard to class 4 depends on a rational, functional survey of departmental values, which it is hoped will be conducted some time in the future.

Functional Analysis of Personnel Program

Employment	Wage and Salary Determination	Research and Planning	Employee Relations
		Office	
Procurement (a) Advertising* (b) School contacts	Description of job duties Evaluation and grading of jobs	Organization analysis (a) Levels of authority (b) Work flow (c) Promotional opportunity	Counseling with individual employees having grievances or personal problems affecting work performance
Selection (a) Interviews* (b) Tests (c) Medical exams	Pricing of job grades based on wage surveys in the area	Analysis of manpower needs and utilization	Attitude or morale surveys reflecting sore spots and how they can be corrected
Placement	Salary adjustments	Ways and means of measuring the effectiveness of personnel technics with view of improving same	Supervisory training to improve the handling of personnel
Exit interviews*	Performance rating		
Unemployment compensation claims, hearings, etc.	Writing of job specifications to be used in employment Analysis and control of overtime costs	Analysis of federal and state laws and regulations as they affect employer-employee relations	Employee services (a) Insurance - hospital medical care and life† (b) Annuity plan †
		Mechanical Department	
Most phases of employment such as procurement, selection, placement, etc. are controlled by contractual relationships Unemployment compensation claims, hearings, etc Administration of G.I. training program	Wages established through contract negotiations Analysis and control of overtime costs Development of wage formula to expedite negotiations	Analysis of federal and state labor laws as they affect management-union relations Compilation of statistics supporting negotiations strategy Constant need for studying improved printing technics to reduce labor costs	Presenting management's position in all grievances to the union and following through the appeals procedure as established in union contracts Regular participation in industrywide bargaining with the several unions to formulate acceptable contracts Letters and other means of contacting directly individual employees to give them both sides of issue Employee services (a) Insurance - hospital medical care and life† (b) Annuity plan†

* Mr. Bruce.
† Mr. Hoffman.

The largest specific job carried on in 1947 by the Bureau was the determination of wage and salary policy for office personnel. As a preface to a discussion of that project, it should be stated that for the purpose of salary and wage administration there are four classes of employees at Association headquarters;

1. Employees under union contracts. The Bureau of Industrial and Personnel Relations either deals directly with the union concerned or through collaboration with the job or commercial printing industry trade association, the Franklin Association, of which the Director of the Bureau is a member of the Board of Governors; he is also a member of some negotiating committees that affect the American Medical Association.
2. Office employees receiving less than $5,000 per year compensation.
3. Administrative, executive and professional employees not of top status.
4. Top executives.

The aforementioned project relates only to class 2 as just defined.

With respect to class 1, employees under union contracts, the Bureau already has devoted time and effort, through

During 1947, as already stated, the Bureau conducted a study to determine a fair distribution of the payroll to "ordinary" office personnel in accordance with performance values. It was necessary to determine the relative value of what each office employee does in the line of his or her official duties. After consultation with heads of departments and in many cases with individual employees affected, some seventy job classifications were established. These job classifications are too lengthy for inclusion in this report but are available for inspection and study. After consideration of what employees actually do on the basis of these descriptions, a job evaluation was then determined and point values established on the basis of the requirements of each job. The system utilized in the job evaluation study is too lengthy for inclusion in this report but also is available for inspection and study. The theory adopted in the job evaluation study is, it is believed, in accordance with sound personnel practice and the later developments in the field. The class of employee subject to the study is divided into so-called salary grades, accord-

ing to the point values of duties involved. Each salary grade has a minimum and a maximum salary. The endeavor is to see that the average of the employees in each classification approximates the normal of his or her classification. This normal, in turn, either is the midpoint of the salary range or is the median salary paid in the area for the functions concerned. Individual employees may be above or below that normal, in accordance with their abilities, their performance and their experience. It is proposed at periodic intervals to review the performance of each employee by a system of performance rating and to recommend to the General Manager equitable salary adjustments in accordance with those studies.

Much time has been spent by the Bureau, particularly since 1947, in the negotiation of union contracts. As of the date of this writing, March 27, 1948, this effort has not been wholly successful with respect to one typographical union which, as a matter of national strategy, has adopted a policy of no contractual relations and has attempted to impose on the printing industry unilateral conditions of employment imposed solely by the union without proper negotiation with employer groups. This has resulted in a temporary cessation of activities in the Association's composing room, but the publication of THE JOURNAL has continued, its composition being effected by the use of Vari-Typer machines and an out of state print shop. The Bureau has played an active part in the establishment and operation of the Vari-Typer Department. It is hoped that normal composing room operations will have been resumed by the time this report is read.

Committee on Rural Medical Service

The committee on Rural Medical Service has been in existence three years. During this period certain things have been accomplished:

1. In each state a Committee on Rural Medical Service has been created by the state medical association so that the rural problems peculiar to each state can be studied by those familiar with local needs. These state committees are expected to contact the farm leaders whose cooperation is needed if community action is to be obtained.

2. Three annual conferences on rural health have been held in cooperation with the four largest farm organizations. The first explored the nationwide need for better medical care. The second dealt with ways and means by which better health levels could be achieved, and the third had to do with the specific problem of rural youth and the need for better health guidance for the growing farm child.

3. In 1947, to assure a more realistic program for the future, the four largest farm organizations were invited to appoint advisory members to meet with the Committee. The American Farm Bureau Federation, the Farmers Union, the National Grange and the National Cooperative Milk Producers Federation each appointed two of their members, all of whom have been most helpful.

As a result of the second annual conference, the need of trial and error experience on the community level was deemed imperative. The Committee adopted as its objective the organization of communities on the county and trade area basis for the purpose of improving health, cultural and economic conditions. These organizations were to be called Health Councils, or Community Health Improvement Associations. During 1947 such organizations were formed in a number of states, and the number is constantly growing. Health Councils should not be formed for narrow or limited objectives, since the factors that affect health are as broad as human experience.

Many groups having limited objectives are now active in the health field. In this regard may be mentioned the National Tuberculosis Association, the National Foundation for Infantile Paralysis, the American Cancer Society, the American Heart Association and a number of federal government departments. None of these alone can do a complete job; all of them combined leave too much undone.

A properly conceived health council, composed of community leaders with an adequate action and educational program under the direction of capable medical guidance, can do a complete job. This is what the Committee on Rural Medical Service has in mind. At present, we have the state medical association committees on rural health; the farm organizations have comparable committees in many states; the extension departments of the agricultural colleges are ready to cooperate along with their own health education programs; the national 4 H farm youth groups are interested in a health program and will be welcome allies; the Cooperative Health Federation of America, the medical cooperative organization, is willing to cooperate on a basis of minimum professional standards deemed necessary for the provision of good medical care.

An intelligent self interest in a fuller life, made possible through the attainment of a high level of personal well-being, will motivate lay participation in this altruistic yet practical objective.

Preliminary Report of Committee to Consider Red Cross Blood Bank Program

Pursuant to action of the House of Delegates at the Cleveland Interim Session, the Board of Trustees appointed a committee to act as a liaison between the American Medical Association and the American Red Cross Blood Bank Program. This committee has been active, and the Board has received from its chairman the following report:

The undersigned members of your Committee in liaison with the American Red Cross National Blood Program held a two day meeting, April 2 and 3, with officers of the medical department of the American National Red Cross, the Executive Committee of its Advisory Board on Health Services, and its Committee on Blood and Blood Derivatives and Subcommittee on Blood and Blood Derivatives. The numerous implications of the National Blood Program have been explored in detail, and there have been full and frank discussions in detail with the aforementioned representatives of the objections and criticism which the Committee has been able to assemble.

As a result of these deliberations the Committee believes that there have arisen some misunderstandings and apprehensions which demand immediate clarification.

Scope of Need for Blood

The need for blood procurement falls into three general categories: (1) local procurement for local continuing needs; (2) procurement for disaster relief in peacetime, and (3) procurement for single or multiple wartime disaster. The first of the mentioned needs is met in varying degrees by existing facilities in many communities. A further discussion of this need is found in an accompanying statement which the members of this Committee as individual physicians have prepared in collaboration with a number of other physicians familiar with the field. Needs in the second and third classifications require the integration of existing facilities with other facilities which must be established on a nationwide basis. Further explanation on this subject is likewise found in the accompanying statement.

To this classification of need should be added the need of facilities for obtaining and processing blood for derivatives for both research and treatment. Further must be added the present necessity for supplying blood to veterans' hospitals and the potential necessity, at any time, to supply blood and blood products to the armed forces.

Agencies for Meeting the Needs

Blood is procured at present chiefly in three ways: (1) the nonprofit voluntary blood banks; (2) the blood banks already operating in some communities by cooperation between the Red Cross, local medical societies and hospitals (the so-called "permissive" program of the Red Cross, not to be confused with the National Blood Program), and (3) the National Blood Program centers, six of which are already in operation in the following places: Rochester, N.Y.; Wichita, Kan.; Stockton, Calif.; Atlanta, Ga.; Massachusetts State Program, and Washington, D.C., Washington operating as a local program now, to be approved as part of the national program April 15. The Committee believes that all these existing facilities taken together are accomplishing only a portion of the civilian need and a very small percentage of the potential need. It is further convinced that there is a real possibility that hurried expansion may be forced on us at any time. The Committee believes that the Red Cross has no intention of attempting to activate centers for blood where existing facilities meet the general need and has positive assurance to this effect from all concerned. Furthermore, in no community will it establish a center unless the county medical society or societies concerned request Red Cross assistance and give full support to the program. The following statement by Dr. Ross T. McIntire, administrator of the program, is evidence of this:

> The program is not designed to interfere with existing blood banks already meeting community needs for blood. Rather, the program is established in specific localities only after thorough investigation indicates there is a need for blood, that facilities for supporting the program are adequate, and that the local medical society, the health department and the hospitals are in full accord. Where existing blood banks wish to be integrated with the National Blood Program every effort will be made for them to do so.

The possible urgent necessity for such a nationwide pooling of resources influenced the Committee to request the Red Cross to confer with representatives of existing blood banks regarding a basis of affiliation which would assure a general integrated program and to include in the discussion the subject of standards of procedure and technics which would make it effective.

Because of its experience in the procurement and processing of blood during World War II and its national organization and resources, the Committee is satisfied that no other organization is in as favorable a position to conduct such a program as the American National Red Cross.

Physicians should be impressed with the importance of the following two points: (1) that no local program can or will be instituted by the Red Cross without the approval of the local county medical society, and (2) that in the interest of national defense each county medical society should immediately examine the adequacy of the blood supply in its area.

A report adopted by the House of Delegates in January 1948 reads as follows:

> "*Resolutions on Red Cross Blood Program.*—Your reference committee recommends to the House of Delegates continued approval of the 'approval in principle resolution' passed in June 1947 in regard to the establishment of blood banks by the American Red Cross, provided that the American Red Cross accept the following principle: To insure safety to recipients, the responsibility for technical details must rest on properly trained personnel under the control of local or state medical societies."

The Committee is convinced that the American National Red Cross agrees with this principle and will so instruct its local chapters in order that difficulties which have arisen in the past will be corrected and avoided in the future.

The Committee recognizes that the Red Cross cannot make a charge for blood and blood products supplied through its national blood centers; it believes that all physicians should likewise recognize this principle. Existing local blood programs not involved in the Red Cross National Blood Program need make no change in their existing policies; they may be affiliated in the future with the Red Cross program on a basis yet to be determined.

The Committee submits the following recommendation: (1) that the action of the House of Delegates of June 1947 and January 1948 constitutes an adequate statement of the position that the American Medical Association should maintain in regard to the Red Cross Blood Program; (2) that early publication of this report and its accompanying statement be made in THE JOURNAL, and (3) that wide distribution of the material in these documents be made to the officers of all county and state medical societies and to the editors of their journals.

The Committee will continue to work closely with the Advisory Board on Health Services of the American National Red Cross in the future development of the program and will make further reports and recommendations to the Board of Trustees as may become appropriate.

Respectfully submitted,

A. S. GIORDANO, Chairman
JOHN W. GREEN.
LEONARD W. LARSON.
HERBERT P. RAMSEY.
RALPH T. B. TODD.

Statement on the National Need for Blood Transfusion

The last ten years have seen a constantly increasing experience with blood banks in the civilian medicine of the United States. As preserved blood has become available for immediate use in a hospital, the number of blood transfusions has invariably doubled or tripled, regardless of the former provisions for obtaining fresh blood.

From the best available data in this country, it is now estimated that from 4 to 5 pints of blood are required yearly per each hospital bed. This means that a hundred bed hospital will require from 400 to 500 whole blood transfusions annually; in a two hundred bed hospital the requirement is 800 to 1,000 transfusions. There are approximately 6,000 hospitals in the United States but not over 1,200 blood banks. It is obvious from these data and from direct inquiry that a great many patients are not receiving blood because modern transfusion facilities are not available in many localities.

Most of the improvement in transfusion facilities in the past has been accomplished by the establishment of blood banks in individual hospitals or communities. In general, these not only have given excellent service but have stimulated much of the research in the field of blood transfusion.

Naturally, one method of meeting the national need for blood transfusions is the multiplication of the small unit banks along the pattern previously developed. But this ignores another possible function of blood banks, namely, the pooling of the resources of many widely separated communities in

time of disaster, either from natural causes or from war. The responsible physician must visualize and prepare for the possibility that his community may be stricken suddenly with a tornado, a flood, a fire or perhaps an atomic bomb. The normal stocks of blood in the local banks will be insufficient or may be completely wiped out or rendered unfit for use from radioactivity. The blood stocks of other communities must then be called on during the emergency. Unless all these cooperating communities have an integrated organization and similar transfusion equipment, the aid will not be efficient or adequate.

Furthermore, the eventuality must be visualized when thousands of pints of blood will be required for one locality within a period of twelve to twenty-four hours. This amount would exceed the total stock kept for normal civilian needs, and therefore thousands of donors in remote communities would have to be bled for the emergency. Only with a going integrated national program can such facilities be provided. The organization for the procurement of donors must be in existence before the catastrophe. Thousands of sterile transfusion flasks, needles, and equipment for the collection and administration of blood must be stock-piled in advance for such an emergency. If the blood is transported across state boundaries, technical standards observed in collection and processing legally must be approved by the National Institute of Health.

The American National Red Cross is, in our opinion, the logical organization to develop and maintain an integrated program of blood procurement on a national scale. It had the wartime experience of obtaining and processing over thirteen million bleedings, an operation unparalleled in the history of medicine. It is incorporated by act of Congress and specifically charged with certain duties to civilians in time of disaster. Also, it has specific responsibilities toward the armed forces and the veterans. It is supported by the contributions of the American people by small individual donations and therefore is a unique agent of the people.

In June 1947 the Red Cross inaugurated a National Blood Program which proposes to fulfil the needs which have been outlined in this communication. It plans to operate only in those communities where its services are requested and has no intention of curtailing existing blood banks which are meeting community needs. It is an integrated national program based on community and regional blood banks. The program has gotten under way slowly because of insistence on the highest possible technical standards in the operation of each center serving a community. The initiative for setting up a center in a community should come jointly from the local chapter of the Red Cross and the county medical society, which is responsible for the appointment of an advisory committee to nominate the technical director of the center and to continue to advise him in its operation. Further, the program must be set up locally in collaboration with the hospital council or individual hospitals and in conformity with standards set by the health department. Mobile units to collect blood in the surrounding territory operate from each center, and blood from the center is provided to hospitals in the region served by the plan. The local chapter of the Red Cross is responsible for donor recruitment and for volunteer services at the center and with the mobile units. The National Red Cross is concerned with the raising of funds, advise on technical problems through its Advisory Board on Health Services, maintenance of high technical standards through the national organization and the integration of these community programs. In the event of a national emergency it would also be responsible for getting blood to wherever it was needed and providing an adequate supply of blood for the armed forces. Furthermore, it is important that as soon as possible representatives of the local nonprofit blood banks meet with the American National Red Cross in order to discuss means of integration in case of emergency.

As physicians who are interested in better medical care and in the welfare of the country in peace and in war, it is our considered opinion that the National Blood Program of the American National Red Cross is the best plan so far devised to integrate local facilities, including private and hospital banks, for blood transfusion, into a program of national scope which will serve the country in peace and in war. It represents a challenge to the medical profession, to public spirited citizens and to medical scientists to pool their efforts cooperatively for the welfare of the people.

Conclusion

The Board of Trustees has fulfilled in so far as has been possible during the year the directions and mandates given by the House of Delegates at the Atlantic City Annual Session and the Cleveland Interim Session. Various committees requested have been appointed and are at work; some if not all of them will have reports ready for presentation to the House at the Chicago Session. A more complete report on these matters than can be given here will be included in the Handbook of the House of Delegates.

ADDENDA TO REPORT OF BOARD OF TRUSTEES

Report of the Committee on Scientific Research for 1947

Nineteen new grants were made, amounting to $14,680. Sixteen grants were closed. Work is in progress under twenty-five grants.

The needs of support of research by small grants described in applications as well as the results of work aided by small grants indicate that for the present the work of the committee should be continued on about the same scale as in recent years. Accordingly it is suggested that for 1948 $12,550 be appropriated for grants in aid of medical research and $1,200 for the expenses of the committee.

The financial statement for 1947 is presented, also lists of grants pending and closed.

A fairly full statement about the work of the committee from its beginning is made in Dr. Fishbein's "History of the American Medical Association."

Respectfully submitted,

COMMITTEE ON SCIENTIFIC RESEARCH OF THE AMERICAN MEDICAL ASSOCIATION.

E. W. GOODPASTURE, Nashville, Tenn.
Term expires, 1952.

LUDVIG HEKTOEN, Chicago.
Term expires, 1951.

MARTIN H. FISCHER, Cincinnati.
Term expires, 1950.

N. W. JONES, Portland, Ore.
Term expires, 1949.

JOHN J. MORTON, Rochester, N. Y.
Term expires, 1948.

FINANCIAL STATEMENT FOR 1947

Balance, Jan. 1, 1947		$ 5,691.98
Donation to Brant Fund		1,859.49
Appropriation for 1947		12,550.00
Refund, grant 616, Robert S. Dow		65.71
Refund, grant 662, Katharine M. Howell and Etta Knoll		31.31
Refund, grant 670, Wilbur Thomas		48.00
Refund, grant 689, Israel S. Kleiner and Arnold Schein		267.28
Refund, grant 701, Rollin A. Daniel Jr. and F. T. Billings		111.25
Refund, grant 704, Archie R. Tunturi		379.15
		$21,004.17

GRANTS PAID IN 1947

Grant 708, Otto Saphir	$ 1,103.50
Grant 709, Roger M. Reinecke	500.00
Grant 710, Israel Davidsohn	800.00
Grant 711, L. R. Cerecedo	600.00
Grant 712, James H. Leathem	500.00
Grant 713, H. O. Burdick	200.00
Grant 714, Ernest A. Spiegel	600.00
Grant 715, Ben Vidgoff	500.00
Grant 716, Ruth Silberberg	1,000.00
Grant 717, Harold J. Harris	2,860.00
Grant 718, Preston E. Harrison	1,191.50
Grant 719, J. W. Stutzman	1,000.00
Grant 720, Donald E. Olson	375.00
Grant 721, Alfred Appelbaum	600.00
Grant 722, Peter Gruenwald	450.00
Grant 723, Albert Milzer	500.00
Grant 724, Clarence Cohn	400.00
Grant 725, Milton G. Levine and Robert E. Hoyt	500.00
Grant 726, Ulrich Friedemann	1,000.00
	$14,680.00
Balance, Dec. 31, 1947	$ 6,324.17

COMMITTEE EXPENSE

Appropriation for 1947	$1,200.00
Clerical expense, printing	643.93
Unexpended amount, canceled	$ 556.07

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

New Grants—1947

Grant 708: Otto Saphir, Michael Reese Hospital, Chicago, $1,103.50, study by serial sections of axillary lymph nodes for metastatic carcinoma.

Grant 709: Roger M. Reinecke, University of Minnesota, $500, renal gluconeogenesis in various species.

Grant 710: Israel Davidsohn, Mount Sinai Hospital, Chicago, $800, relation of Rh antibodies to fetal erythroblastosis.

Grant 711: L. R. Cerecedo, Fordham University, $600, vitamin B deficiencies in rats and mice.

Grant 712: James H. Leathem, Rutgers University, $500, antihormones.

Grant 713: H. O. Burdick, Alfred University, $200, effect of desoxycorticosterone acetate and progesterone on pregnancy.

Grant 714: Ernest A. Spiegel, Temple University, $600, effect of thalamic lesions on behavior.

Grant 715: Ben Vidgoff, University of Oregon, $500, tests for antidiuretic hormone.

Grant 716: Ruth Silberberg, Barnard Free Skin and Cancer Hospital, St. Louis, $1,000, influence of dietary factors on skeletal aging with particular reference to osteoarthritis.

Grant 717: Harold J. Harris, New York, $2,860, brucellosis.

Grant 718: Preston E. Harrison, Baylor University, $1,191.50, coproantibody in enteric infections.

Grant 719: J. W. Stutzman, Boston University, $1,000, role of visceral afferent impulses in increasing the irritability of the heart.

Grant 720: Donald E. Olson, University of Oregon, $375, studies on the suppressor areas of the cerebral cortex of the dog.

Grant 721: Alfred Appelbaum, St. Francis Hospital, Lynwood, Calif., $600, ocular toxoplasmosis.

Grant 722: Peter Gruenwald, Long Island College of Medicine, $450, effect of nitrogen mustard on embryonic development of the mouse.

Grant 723: Albert Milzer, Michael Reese Hospital, Chicago, $975, fungi in acute diseases of the upper part of the respiratory tract in children.

Grant 724: Clarence Cohn, Michael Reese Hospital, Chicago, $400, intermediary nucleoprotein metabolism.

Grant 725: Milton G. Levine and Robert E. Hoyt, College of Medical Evangelists, $500, commercial Rh antiserums.

Grant 726: Ulrich Friedemann, Jewish Hospital of Brooklyn, $1,000, pathogenesis of tetanus.

STATE OF GRANT-AIDED WORK

Grants Closed During 1947

Grant 582, 1940: Charles W. Greene, Stanford University, $500, physiology of the coronary system in monkeys. Refund $160.48. Results not published.

Grant 584, 1940: Oscar V. Batson, University of Pennsylvania, $200, nystagmus. Refund $128.21. Results not published.

Grant 605, 1941: Harry G. Day, Indiana University, $400, physiologic significance of zinc. Day, H. G., and Skidmore, B. E.: Some Effects of Dietary Zinc Deficiency in the Mouse, *J. Nutrition* **33**: 27, 1947.

Grant 616, 1941: Robert S. Dow, University of Oregon Medical School, $250, effects of clotting in cerebral veins. See grant 566, 1940. Refund $65.71. Results not published.

Grant 650, 1942: Tuberculosis Committee, Minnesota State Medical Association, J. A. Myers, chairman, $1,000, tuberculosis survey of Mecker County, Minn. Danielson, K. A.: The Mecker County Tuberculosis Control Project, *Minnesota Med.* **30**: 635, 1947.

Grant 670, 1944: Wilbur Thomas, Bowman Gray School of Medicine, $300, experimental cardiac rupture. Refund $48.00. Thomas, W.: Clinicopathologic and Experimental Observations on the Pathogenesis of Rupture of the Heart Due to Myocardial Damage, *Am. J. Path.* **23**: 904, 1947.

Grant 685, 1944: Daniel J. Glomset, Des Moines, Iowa, $500, cardiac conduction. See grant 629, 1942. Glomset, Daniel J., and Birge, Richard F.: A Morphologic Study of the Cardiac Conduction System: IV. The Anatomy of the Upper Part of the Ventricular Septum in Man, *Am. Heart J.* **29**: 526, 1945. Glomset, D. J., and Birge, R. F.: A Morphologic Study of the Cardiac Conduction System: V. The Pathogenesis of Heart Block and Bundle Branch Block, *Arch. Path.*, accepted for publication.

Grant 687, 1945: Barnett Sure, Arkansas Agricultural Experiment Station, Fayetteville, $600, effect of sulfonamide drugs on thiamine and riboflavin metabolism. Sure, B.: Availability of Vitamins in Foods and Food Products: III. Riboflavin Balances with Liquid Milk, Dried Skimmed Milk and Evaporated Milk, and the Influence of Succinyl Sulfathiazole on Such Balances, *Arch. Biochem.* **12**: 389, 1947.

Grant 689, 1945: Israel S. Kleiner and Arnold H. Schein, New York Medical College, $400, nutritive value of intact protein compared with the products of its enzymatic and acid hydrolysis. Refund $267.28. Results not published.

Grant 691, 1945: David J. Sandweiss, Thomas L. Patterson and Harry C. Saltzstein, $1,200, relation of the endocrine glands to gastric secretion. See grant 674, 1944. Kaulbersz, J.; Patterson, T. L.; Sandweiss, D. J., and Saltzstein, H. C.: Urine Extracts of Hypophysectomized Dogs Administered in Different Periods of a Double Histamine Experiment, *Federation Proc.* **6**: 140, 1947; Patterson, T. L.; Kaulbersz, J.; Sandweiss, D. J., and Saltzstein, H. C.: Different Periods of Administration of Enterogastrone and Urogastrone in Double Histamine Experiments, *ibid.* **6**: 177, 1947; Kaulbersz, J.; Patterson, T. L.; Sandweiss, D. J., and Saltzstein, H. C.: Urine Extracts of Thyroidectomized Dogs and Gastric Secretion, abstracted, Proceedings of the International Physiological Congress, 1947, p. 372; Patterson, T. L.; Kaulbersz, J.; Sandweiss, D. J., and Saltzstein, H. C.: Gastric Secretory Effects of Urogastrone and Enterogastrone from Hypophysectomized Dogs, *ibid.*, p. 380.

Grant 693, 1946: Catharine Macfarlane, Women's Medical College of Pennsylvania, $1,774.50, value of periodic pelvic and breast examinations for cancer. Macfarlane, C.: Cancer Prevention Clinics, *J. Am. M. Women's A.* **1**: 2, 1946.

Grant 695, 1946: Reuben Mokotoff, Montefiore Hospital, New York, $900, relation to edema of renal clearance in congestive heart failure. Mokotoff, R.: Renal Plasma Flow and Sodium Reabsorption and Excretion in Congestive Heart Failure, *J. Clin. Investigation*, accepted for publication.

Grant 696, 1946: James H. Leathem, Rutgers University, $500, antihormones. See grant 712, 1947. Leathem, J. H.: Further Studies on Antigonadotropic Formation Following Gonadotropic Hormone Administration, *Am. J. Physiol.* **148**: 209, 1947.

Grant 698, 1946: Paul F. Hahn, Vanderbilt University, $500, radioactive manganese in Hodgkin's disease, leukemia, lymphoma, etc. Sheppard, C. W.; Well, E. B.; Hahn, P. F., and Goudsell, J. P. B.: Studies of the Distribution of Intravenously Administered Colloidal Sols of Manganese Dioxide and Gold in Human Beings and Dogs Using Radioactive Isotopes, *J. Lab. & Clin. Med.* **32**: 274, 1947.

Grant 701, 1946: Rollin A. Daniel Jr. and F. T. Billings, Vanderbilt University, $250, quinacrine in the treatment of tuberculosis. Refund $111.25. Results not published.

Grant 705, 1947: Otto Saphir, Michael Reese Hospital, Chicago, $1,103.50, study by serial sections of axillary lymph nodes for metastatic carcinoma. Saphir, O.: Obscure Axillary Lymph Node Metastasis in Carcinoma of the Breast, *Cancer*, accepted for publication.

Work in Progress, 1947

Grant 479, 1937: Tracy, J. Putnam, Boston City Hospital, $200, injuries to the cervical portion of the cord.

Grant 504, 1938: Wallace M. Yater, Georgetown University Medical School, $500, histopathology of bundle branch block.

Grants 518, 1938, and 559, 1939: Harold D. West, Meharry Medical College, $150, synthesis of *dl*-threonine.

Grant 570, 1940: William H. Sweet, University of Chicago, $300, course of nerve fiber tracts of the temporal lobe.

Grant 607, 1941: Fritz Levy, Davis Memorial Hospital, Elkins, W. Va., $250, study of marrow cells. Levy, Fritz: Megakaryocytes and Blood Platelets, *Am. J. Clin. Path.* 15: 154, 1945.

Grant 636, 1942: Peter P. H. de Bruyn, University of Chicago, $400, study of estrogenic substance in laying birds.

Grant 643, 1942: Mehan Mendlowitz, Mount Sinai Hospital, New York, $500, digital circulation (Special Cardiac Research Fund).

Grant 647, 1942: Walter Schiller, Chicago, $250, ovarian tumors. See grant 532, 1939. Schiller, W.: Local Myelopoiesis in Myeloid Leukemia, *Am. J. Path.* 20: 809, 1943.

Grant 656, 1943: Warren O. Nelson, Wayne University, $300, lipids in the adrenal cortex. Refund $133.08. See grant 481, 1937.

Grant 661, 1943: Roland K. Meyer, University of Wisconsin, $500, antihormones. McShan, W. H.; Wolfe, Harold R., and Meyer, Roland K.: Factors Affecting the Action of Antigonadotropic Sera in Immature Rats, *Endocrinology* 33: 269, 1944. Wolfe, Harold R.; Meyer, Roland K., and McShan, W. H.: The Negative Phase in the Antigonadotropic and Precipitin-Productive Activities in Rabbits, *J. Immunol.* 50: 349, 1945.

Grant 677, 1944: J. LeRoy Conel, Harvard Medical School, $500, postnatal development of the human cerebral cortex (Charles A. Brant Fund).

Grant 681, 1944: W. E. Garrey, Vanderbilt University School of Medicine, $500, innervation of the heart in vertebrates.

Grant 682, 1944: Helen Ingleby, $500, problems of cystic disease and carcinoma of the breast.

Grant 690, 1945: Leo L. Hardt, Loyola University School of Medicine, Chicago, $250, improvements of flexrigid gastroscope. See grant 673, 1944.

Grant 692, 1946: Wesley Spink, University of Minnesota, $500, brucellosis. Hall, W. H., and Spink, W. W.: In Vitro Sensitivity of Brucella to Streptomycin; Development of Resistance During Streptomycin Treatment, *Proc. Soc. Exper. Biol. & Med.* 61: 493, 1947.

Grant 694, 1946: L. R. Cerecedo, Fordham University, $600, vitamin B deficiencies in rats and mice.

Grant 699, 1946: Bernard N. E. Cohn, National Jewish Hospital, Denver, $250, experimental bone tuberculosis.

Grant 700, 1946: Harold J. Harris, New York, $2,600, diagnosis and treatment of brucellosis. See grant 717, 1947.

Grant 702, 1946: Hans Popper, Cook County Hospital, Chicago, $1,000, morphology of the liver in relation to function (Charles A. Brant Fund).

Grant 703, 1946: Frederick H. Haward, Lincoln Hospital, New York, $600, vectocardiographic research.

Grant 704, 1946: Archie R. Tunturi, University of Oregon, $600, acoustic system of the dog. Refund $379.15.

Grant 705, 1946: Hovey Jordan, University of Vermont, $450, project method in the teaching of histology.

Grant 706, 1946: Rachmiel Levine, Michael Reese Hospital, Chicago, $1,000, secretion and metabolism of progesterone in threatened abortion. See grant 684, 1944.

Grant 707, 1946: A. M. Lassek, Medical College of the State of South Carolina, $2,000, degenerative phenomena in the pyramidal tract. See grant 671, 1944. Lassek, A. M.: The Pyramidal Tract: Speed of Degeneration in Axons Following Ablation of Cells of Origin in the Monkey, *J. Comp. Neurol.* 83: 45, 1946; Lassek, A. M.: The Human Pyramidal Tract: XV. A Study of Axons in Selected Cases with Congenital Cerebral Malformations, *ibid.* 83: 477, 1946.

Committee on Therapeutic Research

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year the Committee issued eighteen grants. A detailed list of these grants, together with a list of publications during 1947 and of unexpended grants made before Jan. 1, 1947, follows.

New Grants—1947

Grant 583: Paul J. Hanzlik and R. H. Dreisbach, Stanford University School of Medicine: the intravenous use of quinine, $200.

Grant 584: Gladys R. Bucher, University of Illinois Division of Biological Sciences: uropepsin in the urine, $150.

Grant 585: Maria Wiener Kirber, Woman's Medical College of Pennsylvania, and Werner Henle, University of Pennsylvania School of Medicine, the complement fixation reaction in epidemic influenza, $350.

Grant 586: Harold D. Green, Wake Forest College, Bowman Gray School of Medicine, the role of the liver and kidneys in shock, $500.

Grant 587: Richard C. de Bodo, New York University College of Medicine, the antidiuretic action of some depressants of the central nervous system, $500.

Grant 588: Richard C. de Bodo, New York University College of Medicine: the role of gluconeogenesis and carbohydrate utilization in insulin hypersensitivity, $500.

Grant 589: Thomas G. Morrione, University of Vermont College of Medicine, cirrhosis of the liver, $500.

Grant 590: Fred D. Weidman, University of Pennsylvania School of Medicine, torulosis, $400.

Grant 591: Gregory Pincus, Worcester Foundation for Experimental Biology, the mechanism of action of gonadotropin, $2,400.

Grant 592: Sidney C. Werner and Edith Quimby, Columbia University College of Physicians and Surgeons, radioactive iodine in the diagnosis and treatment of toxic goiter, $500.

Grant 593: Robert Chambers, New York University College of Medicine, capillary fragility, $500.

Grant 594: Windsor Cutting, Stanford University School of Medicine, chemotherapy of virus infections, $500.

Grant 595: J. Murray Luck, Stanford University School of Medicine, the use of low-salt human serum albumin for the relief of hypoproteinemia and edema, $500.

Grant 596: Victor Ross, Columbia University College of Physicians and Surgeons, (1) preparation of a Schick toxin which will not require the use of a control solution; (2) preparation of protamine-diphtheria and protamine-tetanus toxoids, $350.

Grant 597: Lloyd D. Seager, Woman's Medical College of Pennsylvania, pharmacology and toxicology of the diamidines, $500.

Grant 598: Ewald E. Selkurt, Western Reserve University School of Medicine, renal physiology, $500.

Grant 599: David F. Marsh and Clark K. Sleeth, West Virginia University School of Medicine, the quantitative aspects of the well known tachyphylaxis that occurs with repeated administration of such drugs as amphetamine, ephedrine, "tuamine" and "propadrine," $400.

Grant 600: Lester R. Morrison, College of Medical Evangelists, cholesterol metabolism of patients who have survived myocardial infarction and those who have died of this disease at the Los Angeles County General Hospital, $500.

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1947:

Uropepsin: A Review of the Literature and Report of Some Experimental Findings, Gladys R. Bucher: Gastroenterology 8:627 (May) 1947.

Disappearance of Uropepsin from the Urine of Gastrectomized Cats, Gladys R. Bucher and A. C. Ivy: Am. J. Physiol. 150:415 (Sept.) 1947.

Quantitative Study of Collagen Content in Experimental Cirrhosis, Thomas G. Morrione: J. Exper. Med. 85:217 (March 1) 1947.

Influence of Body Temperature and of Temperature of Traumatized Tissues upon Local Edema and Survival of Dogs Subjected to Ischemic Compression Trauma of Their Hind Extremities, Edgar L. Lipton, Adam B. Denison and Harold D. Green: Federation Proc. (March) 1947.

Absence of Any Influence of Heparin upon Ischemic Compression Shock Studied at Various Environmental Temperatures, J. R. R. Bobb and Harold D. Green: Federation Proc. (March) 1947.

Ischemic Compression Shock; Influence of Body Temperature and of Temperature of Traumatized Tissues, Edgar L. Lipton, Adam B. Denison, and Harold D. Green: Am. J. Physiol. 150:693 (Oct.) 1947.

Effect of Ergotamine Tartrate on Potassium Changes in Histamine Shock, Caroline tun Suden: Proc. Soc. Exper. Biol. & Med. 64:464, 1947.

Effect of Adrenocortical and Sympathico-Adrenal Factors on the Cardiovascular Sensitivity to Potassium in the Rat, Caroline tun Suden: Am. J. Physiol. 149:589 (June) 1947.

On the Mode of Action of Penicillin, L.O. Krampitz and C.H. Werkman: Arch. Biochem. 12:57 (Jan.) 1947.

The Effect of Digitalis on the Fluid Distribution of the Body, Carrol A. Handley and Jane Telford: J. Pharmacol. & Exper. Therap. 89:97 (Jan.) 1947.

Relations Between Cutaneous Blood Flow and Blood Content in the Finger Pad, Forearm and Forehead, A. B. Hertzman, W. C. Randall and K. E. Jochim: Am. J. Physiol. 150:122 (July) 1947.

A Comparison of the Bronchodilator Activity of Benadryl With Some of its Derivatives and Certain Other Substances, Fred W. Ellis: J. Pharmacol. & Exper. Therap. 89:214 (March) 1947.

The Effect of Sulfonamide Administration on Cardiac Function in the Dog, Roberts Hofkosbring and Grace E. Bertenberger: Am. Heart J. 33:84 (Jan.) 1947.

Further Localization and Analysis of Adrenergic Synaptic Inhibition, Amedeo S. Marrazzi and Rose N. Marrazzi: J. Neurophysiol. 10:167 (May) 1947.

Treatment of Graves' Disease with Radio Iodine (I 131), Mayo H. Soley and Earl R. Miller: Chicago M. Soc. Bull. 50:290 (Oct. 18) 1947.

A New Method of Semen Analysis, Edmond J. Farris: Anat. Rec. 97:429 (March) 1947.

An Improved Method for Semen Analysis, Edmond J. Farris: J. Urol. 58:85 (July) 1947.

Studies of the Capsular Substance of Torula Histolytica and the Immunologic Properties of Torula Cells, Albert H. Kligman: J. Immunol. 57:395 (Dec.) 1947.

Comparison of the Time Concentration Curves in Arterial Blood of Diffusible and Non-Diffusible Substances When Injected at a Constant Rate and When Injected Instantaneously, W. F. Hamilton and J. W. Remington: Am. J. Physiol. 148:35 (Jan.) 1947.

Rheumatic Fever Recurrences in Children Without Sulfonamide Prophylaxis: An Evaluation of Environmental Factors, Robert L. Jackson, Helen G. Kelly, Cecilia Healy Rohrer and Julia M. Dunne: J. Pediat. 31:390 (Oct.) 1947.

Chemotherapy of Virus Infections, Windsor C. Cutting and others: J. Immunol. 57:379 (Dec.) 1947.

Penicillin Therapy in Bacterial Asthma, Frieda Baumann, Joan Crump, Ann C. Arthurs, Lloyd D. Seager and Ruth E. Miller: J. Am. M. Women's A. 2:442 (Oct.) 1947.

A Method and Observations on Capillary Fragility in Rabbits, Robert Chambers and Alfred L. Copley: Federation Proc. (March) 1947.

Retinal Sensitivity Contours in Retinitis Pigmentosa. I. Sensitivity to White Light, Charles Haig and Samuel L. Saltzman: Federation Proc. (March) 1947.

Attempted Infection of the Hen and Man with the Sporozoites of Plasmodium Cathemerium 3-H-2, Harry Beckman: Proc. Soc. Exper. Biol. & Med. 66:401, 1947.

Toxicity of "Stilbamidine", Lloyd D. Seager and Gino Castelnuovo: Arch. Path. 44:287 (Sept.) 1947.

Influence of BAL on the Acute Toxicity of Gold Salts in Mice, Hollan Swanson, Joseph Ney and Paul K. Smith: Federation Proc. (March) 1947.

The following grants were issued before Jan. 1, 1947. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed, or not yet published.

Grant 408: Ephraim Shorr, Cornell University Medical College, the effect of progesterone on the vaginal smear, $300.

Grant 443: A. B. Baker and Raymond N. Bieter, University of Minnesota Medical School, toxic effects of sulfanilamide and derivatives on nervous system and effect of vitamin B complex in prevention of such injuries, $500.

Grant 454: W. L. Mendenhall and Albert J. Plummer, Boston University School of Medicine, the quantitative determination of theophylline, $50.

Grant 455: Frederick H. Pratt and Marion A. Reid, Boston University School of Medicine, the effect of cardiac drugs on the denervated lymphatic hearts, $100.

Grant 459: Mary E. O'Sullivan, Bellevue Hospital, New York, the therapeutic effect of estradiol in muscular dystrophy, $100.

Grant 474: Arthur C. DeGraff, New York University College of Medicine, the effectiveness of sodium thiosulfate and sodium formaldehyde sulfoxalate in treatment of cardiac arrhythmias induced experimentally by mercurial diuretics, $400.

Grant 484: Alfred Goerner, Long Island College of Medicine, and M. Margaret Goerner, Brooklyn Thoracic Hospital, the toxic action of carcinogenic compounds on liver tissue, $400.

Grant 488: L. R. Kaufman, New York Medical College, circulatory competence of the intestine in cases of intestinal obstruction, $125.

Grant 489: L. R. Kaufman, New York Medical College, the use of enzyme mixture for dissolving slough, $100.

Grant 550: C.A.Handley and S.A.Peoples, Baylor University College of Medicine, water distribution of the body following the administration of digitalis, $150.

Grant 553: Adrian C. Kuyper, Wayne University College of Medicine, a procedure for the detection and determination of unidentified plasma constituents, $375.

Grant 558: Howard Glass, Marquette University School of Medicine, the comparative effect of "Nembutal" and morphine on the resistance of anoxia of rabbits from the onset of viability to adult life, $250.

Grant 561: G.L.Cantoni, Long Island College of Medicine, the mechanism whereby potassium exerts its effect on the intact smooth muscle, $400.

Grant 562: Grace E. Bertenberger, Woman's Medical College of Pennsylvania, cardiac physiology as revealed by the electrocardiogram during serum sickness and sulfonamide hypersensitivity reactions, $500.

Grant 563: Gregory Pincus, Worcester Foundation for Experimental Biology, standardization of chorionic gonadotropin, $1,016.

Grant 564: F.E.Kelsey, University of Chicago, the effect of drugs on phosphorus metabolism, $500.

Grant 565: Gregory Pincus, Worcester Foundation for Experimental Biology, the mechanism of action of the gonadotropic hormone, $2,100.

Grant 569: Samuel L. Saltzman and Charles Haig, New York Medical College, the therapy of retinitis pigmentosa, $500.

Grant 498: Linn J. Boyd and Kurt Lange, New York Medical College, the effect of cold in the treatment of shock, $300.

Grant 499: Joseph Litvina, New York Medical College, the chemistry and hematology of blood donors, $200.

Grant 506: Andrew F. Burton, Howard University School of Medicine, (1) the distribution of sulfanilamide in maternal and fetal tissues at various stages of pregnancy; (2) the toxic effects of quinine on the fetus in utero, $600.

Grant 514: Horton McCutcheon, University of Pennsylvania School of Medicine, the toxicity of sulfonamide drugs and penicillin and the mechanism of chemotaxis in leukocytes, $150.

Grant 516: Nellie Perry Watts, Woman's Medical College of Pennsylvania, methods to prolong the action of local anesthetic drugs, $250.

Grant 525: Herbert Silvette, University of Virginia Medical School, the effect of low barometric pressures on kidneys previously damaged, either surgically or by drugs, $250.

Grant 528: Linn J. Boyd and Kurt Lange, New York Medical College, capillary permeability of the meninges in meningitis and meningisms, $350.

Grant 529: Linn J. Boyd and Kurt Lange, New York Medical College, the effectiveness of physiotherapeutic measures in peripheral vascular diseases, $350.

Grant 531: Thomas H. McGavack, New York Medical College, the absorption of compressed pellets of the steriod hormone, $400.

Grant 532: Thomas H. McGavack, New York Medical College, inulin and "Mioderast" clearances in endocrine diseases, $250.

Grant 533: Robert S. Teague, University of Alabama School of Medicine, the metabolism of diethylstilbestrol and its derivatives with emphasis on the ration of absorption, the distribution, fate and excretion of these drugs, $500.

Grant 534: Stephen P. Jewett, New York Medical College, the use of ammonium chloride in psychiatric disorders, $350.

Grant 538: Thomas H. McGavack, New York Medical College, water balance under the influence of various hormones, $200.

Grant 542: Woman's Medical College of Pennsylvania, the use of penicillin therapy in intrinsic (bacterial) allergy with chronic infection of the sinuses, $500.

Grant 543: Harold D. Green, Wake Forest College, Bowman Gray School of Medicine, the influence of environmental temperature of ischemic compression shock, $400.

Grant 547: L.H.N.Bach, Tulane University of Louisiana School of Medicine, the effect of certain hormones on the renal tubules, $150.

Grant 570: F. William Sunderman, University of Pennsylvania, Pepper Laboratory of Clinical Medicine, the use of congo red in measuring serum volume and in detecting acyloidosis, $400.

Grant 571: Edmond J. Farris, Wistar Institute of Anatomy and Biology, and Roland Hughes, University of Pennsylvania School of Medicine, the effects of endocrines and other substances on spermatogenesis in males with low sperm counts, $1,200.

Grant 572: C. H. Werkman, Iowa State College, Department of Bacteriology, the mechanism of action of penicillin and streptomycin, $1,000.

Grant 573: Joseph L. Lilienthal Jr., Johns Hopkins Hospital, relation of the enzyme system to pathophysiology of muscle and nerve function, $500.

Grant 574: E. A. Evans Jr., University of Chicago, Department of Biochemistry, biochemical study of the cellular mechanism for protein synthesis, $500.

Grant 575: Tom Addis, E. Barrett, L. J. Poo, L. Way and W. Yuen, Stanford University School of Medicine, reasons for the differences in the effects of various proteins on the rate of growth of the kidney, $1,000.

Grant 576: Harold D. Green, Wake Forest College, Bowman Gray School of Medicine, the effects of heparin on traumatic shock, $300.

Grant 578: Aaron E. Margulis, New York Post-Graduate Medical School and Hospital, bacteriophage phenomenon, $1,000.

Grant 579: Aaron E. Margulis, New York Post-Graduate Medical School and Hospital, experimental and clinical endocarditis, $1,000.

Grant 581: Victor Ross, Columbia University College of Physicians and Surgeons, Schick toxin and protamine-tetanus toxoid, $350.

Grant 582: Allan D. Bass, Syracuse University College of Medicine, vascular disease and hypertension, $500.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the Year Ended December 31, 1947

Investments (at cost) as at January 1, 1947		$4,624,832.41
Bonds purchased (at cost)		1,036,341.63
		$5,661,174.04
Less:		
Bonds called, matured or sold		1,258,340.34
Investments as at December 31, 1947		$4,402,833.70
Balance for Investment January 1, 1947	$ 119,252.63	
Interest received on Investments in 1947	109,845.94	
	$ 229,098.57	
Transferred to General Fund	$ 195,000.00	
Uninvested Funds at December 31, 1947		$ 34,098.57
Invested and Uninvested Funds as at December 31, 1947		$4,436,932.27

DAVIS MEMORIAL FUND

Balance in fund January 1, 1947	$ 8,003.11
Interest earned on bank balance in 1947	100.34
Funds on deposit at December 31, 1947	$ 8,103.45

AMERICAN MEDICAL ASSOCIATION RESEARCH FUND

Investments (at cost) as at January 1, 1947		$1,499,512.50
Bonds purchased (at cost)		350,000.00
		$1,849,512.50
Less:		
Bonds sold	$ 361,500.00	
Investments as at December 31, 1947		$1,488,012.50
Uninvested funds as at January 1, 1947	487.50	
Add:		
Excess of proceeds over cost of bonds sold	$11,500.00	
Less:		
Loss on exchange of securities	2,437.50	
	9,062.50	
Uninvested funds at December 31, 1947		9,550.00
Invested and Uninvested funds as at December 31, 1947		$1,497,562.50
Interest earned on investments and transferred to General Fund to apply on Research expenditures	$ 34,423.96	

JOSIAH J. MOORE, Treasurer.

AUDITOR'S REPORT

January 30, 1948.

To the Board of Trustees,
American Medical Association,
Chicago, Illinois.

Dear Sirs:

We have examined the balance sheet of the American Medical Association, Chicago, Illinois, as of December 31, 1947, and the statement of income for the year ended on that date, have reviewed the system of internal control and the accounting procedures of the Association and, without making a detailed audit of the transactions, have examined or tested accounting records and other supporting evidence, by methods and to the extent we deemed appropriate except as hereinafter stated regarding confirmation of receivables and observation of the inventory taking.

The cash and bank balances have been confirmed by count or by certificates from the depositaries. The United States Government and other marketable securities were confirmed by an acknowledgment from the Continental Illinois National Bank and Trust Company of Chicago where the securities are held for safekeeping.

We did not independently confirm the accounts receivable by communication with the debtors. The accounts receivable were reviewed as to age and collectibility and, in our opinion, the balances are fully realizable. We reviewed the plan and system of control adopted for inventory taking but we did not observe the taking of the inventories nor did we make tests of the physical existence of the quantities recorded.

Expenditures charged to property and equipment accounts during the year, in our opinion, were properly capitalized as representing additions or improvements. The provision for depreciation for the year appears to be adequate.

All ascertained liabilities have been included in the accounts. Attorneys for the Association state that no litigation was pending against the Association as of the balance sheet date.

In our opinion, subject to the exceptions set forth in paragraph three, the accompanying balance sheet and related statement of income present fairly the position of the Association at December 31, 1947, and the results of the operations for the year, in conformity with generally accepted accounting principles.

Fidelity insurance is carried on all officers and employees under a comprehensive form policy covering loss through dishonesty, forgery, etc., in amounts ranging from $2,500.00 to $50,000.00 (depending upon nature of loss) for each individual.

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for proper conduct of the examination.

Yours truly,

PEAT, MARWICK, MITCHELL & CO.

INDEX TO STATEMENTS

	Exhibit
Balance Sheet as of December 31, 1947	"A"
Statement of Income for the year ended December 31, 1947	"B"
Schedule	
Publications (Periodicals) Costs and Expenses for the year ended December 31, 1947	"1"
Expenses of Councils, Bureaus and Committees for the year ended December 31, 1947	"2"

Exhibit "A"

Liabilities

Accounts Payable and Accrued Expenses:		
Cooperative Medical Advertising Bureau		$ 39,379.87
Miscellaneous accounts		113,101.88
Salaries and wages		18,519.53
Taxes:		
Federal withholding and social security	$ 40,277.97	
Real estate and personal property	45,900.00	86,177.97
Total Accounts Payable and Accrued Expenses		257,179.25

Unexpired Subscriptions to Publications			328,992.13
Deferred Credits—Directory report service and sundry other credits applicable to subsequent period			381,945.38
American Medical Association Research Fund Reserve			1,497,562.50
Net Worth:			
Association Reserve		350,000.00	
Building Reserve		450,000.00	
Retirement Reserve		675,000.00	
Equipment—Modernization Reserve		700,000.00	
Capital Account:			
Balance at December 31, 1946	$3,785,257.56		
Excess of expenses over income for year ended December 31, 1947	50,847.30	3,734,410.26	5,909,410.26
Total			$8,375,089.52

Assets

Property and Equipment—at cost:			
Land			$ 328,773.98
Buildings		$1,386,264.31	
Machinery and printing equipment		549,327.74	
Office and laboratory equipment		255,165.25	
		2,190,757.30	
Less—Reserve for depreciation		1,166,773.42	1,023,983.88
Type metal (book inventory)—at average cost			23,803.28
Total Property and Equipment			1,376,561.14
American Medical Association Research Fund:			
United States Government securities—at cost (valuation based on market quotations, $1,460,484.38)		1,488,012.50	
Cash in bank		9,550.00	1,497,562.50
Marketable Securities—at cost (valuation based on market quotations, $4,303,866.50):			
United States Government securities		2,746,551.56	
Railroad, municipal, public utility and industrial bonds		1,656,282.14	4,402,833.70
Representing investments of:			
General Fund		1,052,833.70	
Depreciation Reserve Fund		1,175,000.00	
Association Reserve Fund		350,000.00	
Building Reserve Fund		450,000.00	
Retirement Reserve Fund		675,000.00	
Equipment Modernization Reserve Fund		700,000.00	
Cash Held by Treasurer for Investment			34,098.57
Cash in Banks and on Hand			172,689.07
Accounts Receivable:			
Advertising		237,352.02	
Reprints		4,880.84	
Directory Report Service, 18th Edition		10,933.26	
Miscellaneous accounts receivable		18,001.57	271,167.71
Interest Accrued on Investments			27,134.42
Inventories of Materials, Supplies, Work in Progress and Publications			174,627.74
Expenditures on Publications in Progress			373,429.12
Prepaid Expenses, Deposits and Advances:			
Insurance, etc.		16,163.64	
Deposits and advances		28,821.91	44,985.55
Total			$8,375,089.52

Exhibit "B"

STATEMENT OF INCOME

FOR THE YEAR ENDED DECEMBER 31, 1947

Income:			
Fellowship dues			$ 70,800.00
Income from investments			133,998.80
Miscellaneous receipts and other income			37,713.55
			242,512.35
Publications—Periodicals:			
Subscriptions		$1,558,483.11	
Advertising		2,342,605.39	
		3,901,088.50	
Costs and expenses—Schedule "1"		2,840,344.46	1,060,744.04
Books, pamphlets and reprints sold		89,979.40	
Less—Printing and other costs		83,874.34	6,105.06
Total Income			1,309,361.45
Expenses:			
Conducting councils, bureaus and committees—Schedule "2"		1,128,427.65	
Legal and investigating		1,000.00	
Employees' group annuities		141,159.01	
State unemployment tax		6,543.37	
Federal social security tax		31,744.22	
Miscellaneous		51,334.50	1,360,208.75
Excess of Expenses over Income			$ 50,847.30

J. A. M. A.
May 8, 1948
Schedule "1"

PUBLICATIONS (PERIODICALS) COSTS AND EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1947

Wages and salaries		$1,295,221.77
Paper stock		554,972.18
Contract printing—Labor and supplies		94,792.40
Engravings and illustrations		68,554.35
Ink		26,303.30
Magazine mailing supplies		5,180.29
Factory supplies		28,695.40
Repairs and renewals		5,421.01
Express and cartage		14,331.61
Power and light		16,260.50
Building maintenance expense		79,924.52
Fuel		8,619.02
Insurance and taxes		49,565.09
Editorial news and reporting		29,507.17
Postage—First class		94,468.72
Postage—Second class		95,315.04
Subscription and advertising commissions		158,242.69
Discounts		38,728.88
Exchange		1,829.56
Subscription promotion expense		38,505.77
Office supplies		29,836.50
Telephone and telegrams		8,223.88
Office printing		33,989.82
Binding		6,226.09
Miscellaneous operating expenses		37,465.20
Employees' group hospital and life insurance		18,706.50
Increase in estimated cost to complete issues of special journal publications		1,369.46
Bad debt and tax recoveries and refunds		1,036.11
Loss on sale of equipment		2,355.38
Loss on metal dross sales		526.78
		2,844,174.99
Depreciation (based on estimated remaining life):		
Buildings	$23,479.60	
Machinery	15,289.89	
Type and factory equipment	1,837.66	
Furniture and equipment	9,824.18	50,431.33
		2,894,606.32
Deduct—Proportion of overhead expenses charged to other publications and departments		54,261.86
Total		$2,840,344.46

NOTE.—Total wages and salaries for year 1947 amounted to $2,347,671.00. Of this amount $1,295,221.77 is included above, $680,186.86 is shown in Schedule "2" (expense of Councils, Bureaus, Association and Special Committees) and the remainder, $372,262.37, was disbursed in connection with the 18th Edition of the American Medical Directory, now in preparation, and with the printing of books, reprints, pamphlets and printing in process at the close of the year.

Schedule "2"

EXPENSES OF COUNCILS, BUREAUS AND COMMITTEES

FOR THE YEAR ENDED DECEMBER 31, 1947

Salaries and wages	$ 680,186.86
Office printing and binding	34,843.72
Office supplies and repairs	19,368.27
Express, telephone and telegraph	8,788.48
Postage	16,733.93
Books and periodical subscriptions	2,373.75
Legislative services	5,222.85
Statistical data	21,801.00
Miscellaneous expenses	12,614.29
Educational material distributed	10,709.95
Staff travel	61,267.52
Radio broadcasting and electrical transcriptions	73,825.25
Inspection of hospitals and medical schools	9,926.53
Educational exhibits	14,468.60
Trustees' meeting expenses	17,044.53
Grants, tests and investigations	35,840.83
Section secretaries' conference and honorariums	3,589.43
State secretaries' conference	9,858.64
Council and Bureau conferences	28,485.18
Sundry committee expenses	61,538.84
Total	$1,128,427.65

NOTE.—The above expenses are spread over the following Councils, Bureaus, and Committees as indicated: Association, $291,725.34; Bureau of Health Education, $151,293.46; Council on Pharmacy and Chemistry, $109,421.37; Chemical Laboratory, $38,774.32; Council on Physical Medicine, $34,547.62; Council on Foods and Nutrition, $24,791.23; Committee on Therapeutic Research, $13,391.66; Council on Medical Education and Hospitals, $101,987.33; Bureau of Legal Medicine and Legislation, $37,206.41; Bureau of Investigation, $8,836.51; Bureau of Medical Economic Research, $89,434.49; Council on Industrial Health, $47,055.92; Association and Bureau of Exhibits, $50,906.07; Council on Medical Service, $121,807.59; Committee on Industrial and Personnel Relations, $17,168.33.

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

During the past year the work of the Judicial Council has been divided between the usual matters that are presented in accordance with its duties as outlined in the By-Laws and the study of the revision of the Principles of Medical Ethics which was assigned to it at the annual session in San Francisco in 1946.

Three meetings have been held since the Atlantic City Session, two in Chicago on Nov. 12, 1947 and March 14, 1948 and one in Cleveland in January in conjunction with the Interim Session of the House of Delegates. All the routine matters usually presented to the Council were disposed of satisfactorily. These consisted of many letters asking for information concerning the application of different principles to certain acts either committed or contemplated. They were answered by some member of of the Council, giving the decision of the entire Council. The nominations and recommendations of candidates for Associate Fellowship were considered and decided. Also all candidates for Fellowship whose applications were questioned were examined and finally accepted or rejected.

There was one appeal heard in January at Cleveland. This appeal was from the decision of a component county medical society which refused membership to a group engaged in a local insurance medical service. The appeal was accepted inasmuch as several of those engaged in this service were Fellows of the American Medical Association through affiliation with another state association. They joined this insurance group with the knowledge that they would be barred from membership in the county society. Under the By-Laws of the American Medical Association, a Fellow moving to another state and failing to become a member of a component society within twelve months loses his Fellowship. However, he has the right of appeal to the Judicial Council. The Council may give an opinion but has no power whatsoever to compel a component society either to accept or to reject a candidate for membership. The interesting part of this appeal is that these members were operating an insurance medical service which was conducted without any regard for the ten principles outlined by the American Medical Association. They neither gave free choice of physicians nor permitted the participation of any hospital other than the one operated by the group. There was no criticism from either side regarding the men involved; therefore, the appellants were advised to join the state insurance group, to provide free choice of physicians and to arrange for the use of such hospitals as were approved by the local profession so that they might regain or maintain membership in organized medicine. The Council understands that conferences are now taking place to adjust this matter.

Revision of Principles of Medical Ethics

The most important work of the Judicial Council during the year was a revision of the Principles of Medical Ethics in accord with the mandate of the House of Delegates at San Francisco. The draft of the revised principles constitutes a part of this report although not included herewith. Mimeographed copies were sent to the members of the House of Delegates before the annual session in order that the delegates might have ample time for a careful study and that acceptable changes which might otherwise obstruct or delay the routine procedure of the House may be dealt with before the session and thus facilitate action. This is especially urgent since in addition to the usual business of the House, the revision of the Constitution and By-Laws will be again presented

It might not be amiss at this time to review the existing Principles of Medical Ethics with a view to their value to the medical profession, the reason for their being and the background of their development. The principles of proper behavior in practically any walk of life, and particularly in the profession of medicine, are both timeless and immutable. In reviewing the history of present ethical principles, their existence even before they were ever formulated or put into print is noted. Members of the medical profession have always adhered to certain concepts of ethics. They are formally phrased in the Constitution of the American Medical Association, which reads:

> The objects of the Association are to promote the science and art of medicine and the betterment of public health.

In the Principles of Medical Ethics of the American Medical Association they are phrased as follows:

> A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession, an individual assumes an obligation to conduct himself in accord with its ideals.

This language did not constitute an original promulgation at the time it was first uttered as a canon of ethics. It was merely the crystallization of the characteristics of behavior of the best medical practitioners at all times and in all ages, embodied formally in the foregoing words. These considerations are presented for the purpose of making the point that it is nothing new in medical tradition for emphasis to be placed on the maintenance of standards. Medicine would not have advanced through the centuries if this had not always been the motive activating the physician.

The first printed code was published by Dr. Thomas Percival of England in 1803. He was asked to arbitrate the differences between two members of the staff of the hospital with which he was associated and after settling this dispute became exceedingly interested in the welfare of the medical profession and its future development. In 1792, at the request of a group associated with the Manchester Infirmary, he began to compose a series of ethical principles as a guide to the members of his profession. After some years, and helped by the criticism of his friends, he revised and published the manuscript. In 1823 the New York State Medical Society adopted a series of principles of ethics and in 1832 the Baltimore Medical Society did likewise. Both of these series were practically the same as Dr. Percival's original principles of ethics. Finally, at the first national medical convention, which assembled in New York in 1846, the following resolution was introduced:

> That it is expedient that the medical profession in the United States should be governed by the same code of medical ethics, and that a committee of seven be appointed to report a code for that purpose at a meeting to be held in Philadelphia on the first Wednesday of May 1847.

The resolution was adopted, and a committee was appointed with Dr. Isaac Hays as chairman. In presenting his report to the convention on June 5, 1847 Dr. Hays stated that his committee, after a careful examination of the codes then in practice in a large number of states, found them to be based almost entirely on that of Dr. Thomas Percival. He further reported that the language of this original document was preserved, in most instances, to a considerable extent, not only because of its precision and clarity but also because of its merit as recognized by the approval and adoption of the

other committees. Nevertheless, the principles were modified somewhat in 1880 and rewritten in 1903. Since that time some important additions have been made. Those of considerable importance to the profession are the principles concerning advertising, solicitation of patients, contract practice and the splitting of fees. In recent years there have been several attacks on these principles as they now stand, and requests have been received that they be completely revised. The complaints in the main are that the language is not clear and that the principles are difficult to interpret. In the same measure it is well to realize that this criticism may apply to the laws enacted by the different legislatures of this nation. It is practically impossible to write a law or principle of ethics in such terms that it will be correctly interpreted by all. As a matter of fact, when a law is passed by the legislature and signed by the governor, it is not a law in many cases until a court test has been made and an official interpretation given by the judge. The function of the Judicial Council is to interpret the Principles of Medical Ethics, and the Council is willing at all times to interpret them and to express its opinion as to their application to any specific case. Many times, however, these letters by their very tone make the Council believe that the writers are trying to get an interpretation outside the meaning of the Principles for their own personal advantage. It might be well to note here that the Council has never had a case which could not be settled within the present Principles of Medical Ethics, and the Council's interpretation has never been particularly difficult or ever questioned.

The high opinion of the medical profession as held by the public is due in large measure to the whole-hearted manner in which the great mass of physicians have accepted the Principles of Medical Ethics and conducted their professional life in accordance with them. This is true also of physicians who are not even members of the Association. The Principles have always emphasized the dignity of the medical profession and have insisted that the physician give his great concern to the advancement of public health and the observance of the law. The present Principles of Medical Ethics stress first the duties of the physician to his patient. They remind him of the full responsibility that is his once he has accepted the patient. They also point out that the physician is free to choose whom he will serve but that he should also respond to any request for assistance in times of emergency or whenever temperate public opinion expects the service. This responsibility for the patient also demands that the physician keep the public welfare in mind and that in a situation where the patient may be a menace to the public, being a possible cause of an epidemic, the public welfare must be paramount. The success of medical practice has depended on the confidential relationship between physician and patient. Every article in the Principles of Medical Ethics is predicated on and stresses that relationship. The Principles also call on the physician to protect his patient and to arrange for necessary consultations when the physician thinks they may be helpful. The Council repeats that the Principles have always insisted that the duty of the physician is first to the patient, second to the public and third to the proper relationship with his fellow members of the profession. These last instructions are well explained in the present day Principles and are especially important to the young physician as a guide to his proper conduct. Finally, these Principles of Medical Ethics distinguish the members of the medical profession from the cultists and charlatans. It might be well to quote at this time a statement issued by the Judicial Council at the San Francisco Session in 1938:

> The ethics of medicine is stated as it should be in principles of conduct instead of rules. To define and interpret these principles so as to cover every relation of the medical man would be to set up an endless system of rules, regulations and laws approaching in character a criminal code, with its invitation to violation by sophisticated reasoning or through technicality. A rule, regulation or law may be circumvented, but the principle underlying the law cannot be avoided by such means. As occasion arises, amendments will doubtless be made in the future as they have in the past, but these are strenuous times of rapid and radical change and no one can predict the immediate or remote future.

It is still the unanimous opinion of the Judicial Council that the ethics should be written as principles and not as laws, and that these principles should be as broad as possible. It is a well known fact that some of the state medical associations have their own principles of ethics and rules of conduct. These differ in many cases from the Principles of the parent organization in that they may be more specific and vary according to local custom. They must not, however, contravene the Principles of Medical Ethics of the American Medical Association. Enforcement of the ethics of medicine is a function of the component societies and constituent associations. Penalties or punishment for violation of the Principles of Medical Ethics of any state society or of the American Medical Association must be determined and applied by the state society involved. The Judicial Council is an appeal court and of itself has no punitive power for violation of ethical principles. For many years the Principles of Medical Ethics have been the bulwark on which the great reputation of the medical profession has been established, and they should be modified only with great caution.

Resignation of Dr. Lloyd Noland.

During the past year the Judicial Council has suffered a great loss in the resignation of a long-standing member, Dr. Lloyd Noland. This action was due to a temporary illness, which unfortunately did not respond to treatment as rapidly as expected and made his attendance at meetings impossible. Dr. Noland became a member of the Council in 1935, serving a two year term through 1937. He was again appointed in 1943 and has remained a member since that date. During the years of his membership he attended all meetings but one. His experience, sound judgment and deep understanding of the principles which underlie the conduct of a professional man made him one whose opinions were always received with careful consideration. His behavior in all instances was a worthy model for the younger men of the profession. He had the happy faculty of liking people and never failed to give generous evidence of his sincere regard for them. During the years of his service, his valuable contribution to the work of the Council has made an indelible impression on its members. The Council regrets his decision to retire but hopes and believes that he will soon be returned to health and once more be found active among his friends in the profession.

The President of the Association, Dr. Edward L. Bortz, has appointed Dr. Homer L. Pearson of Miami, Fla., to fill the place of Dr. Noland on the Council until the Chicago Session in June. Dr. Pearson has already attended one meeting of the Council.

Respectfully submitted,

EDWARD R. CUNNIFFE, Chairman; HOMER L. PEARSON; JOHN H. O'SHEA; LUIS A BUIG; WALTER F. DONALDSON.

REPORT OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

The major concerns of the Council on Medical Education and Hospitals during the past year have been with the projected survey of medical education, the training of general practitioners, the extent to which the facilities for medical education in this country are meeting the nation's needs for physicians, the financial support of medical schools and the supply and distribution of interns.

Survey of Medical Education

A year ago the Board of Trustees approved the recommendation that a complete survey of the medical schools of the United States be undertaken and voted to provide the required financial support. During the course of the year the Council has enlarged its view of the scope that might reasonably be established for the survey. This broader view is reflected in the fact that the survey is now designated as a Survey of Medical Education rather than a Survey of Medical Schools.

The Council has recognized that the proper organization of this survey and a clear definition of its objectives is a heavy responsibility. In its report to the House of Delegates last year the Council discussed the great benefit that would result if the survey were conducted jointly with the Association of American Medical Colleges. The Board of Trustees has approved the recommendation of the Council that the survey be conducted by a Committee sponsored jointly by the Council on Medical Education and Hospitals and the Association of American Medical Colleges. To date this committee has been occupied with formulating the objectives of the survey, determining the general program for its conduct and selecting the full time personnel who will carry out the survey.

The future course of medical education in this country during the next fifteen to twenty years will probably be influenced to a significant degree by the results and recommendations of this survey. It is frequently stated that there has been no fundamental change in the medical curriculum in the past forty or fifty years. It is true that undergraduate medical education has been conducted within the framework of four academic years since 1893. Within that framework, however, such profound changes have occurred and are continuing to occur in the length of the academic year, in the content of the curriculum and in methods of instruction that any resemblance between the medical school course of today and that of forty or fifty years ago is limited largely to superficial characteristics.

It is generally agreed, however, that the time is appropriate to reexamine carefully both the methods and objectives of medical education so that a clear view may be obtained of the extent to which medical education has been adapted to modern needs and of the extent to which additional modifications of traditional practices are desirable.

Training of General Practitioners

The increased interest in specialization during recent years has appeared at times to have resulted in a lack of interest in the development of programs for the training of physicians who plan to enter the general practice of medicine. It is encouraging, therefore, to report that a number of medical schools are already conducting programs specifically designed to stimulate an interest in general practice among students and that many of the other schools are studying the problem with genuine interest in the expectation of fostering similar developments in the near future. Whether coincidentally or because of these efforts, reports are being received from several schools that the percentage of students expressing a desire to enter general practice is increasing.

The Council is also studying with deep interest the number of internship and residency programs that are being developed for the specific purpose of preparing physicians for general practice. The number of such opportunities that are developed will be an important factor in attracting young physicians to careers in general practice. In conducting the annual census of hospitals during the past year the Council sought information which would indicate to what extent the hospitals are organizing training programs for general physicians. When this information has been compiled, more detailed studies will be made with a view to accumulating as much information as possible concerning current trends in this field.

Because of the importance of the subject, it was arranged to have two papers presented at the Annual Congress on Medical Education and Licensure describing programs that have been established for the training of general practitioners at the undergraduate and internship levels.

It seems clear that interest in training general practitioners will continue to grow. One basic question to which an answer is needed is, "What fields of medicine will be the province of the general practitioner or family physician who ministers to the next generation?" On the answer to this question will depend to a large extent the direction in which programs for training the general practitioner will develop.

The Supply of Physicians

During the past year wide publicity has been given in the lay press to forecasts by the United States Public Health Service that a serious shortage of physicians will occur by 1960. The Council has been concerned that these forecasts would result in pressure being brought to bear on the medical schools of the country to accept more students than they can properly train, since the medical schools are already operating at maximum capacity. There is evidence that certain schools have already been subjected to such pressure. Agitation for the establishment of substandard medical schools is another consequence to be feared from such forecasts.

The Council believes that alarm over the supply of physicians is unwarranted. The current rate of production of physicians is the highest in history, and the physician population of the country is increasing at a relatively more rapid rate than the general population. Representatives of the Council have met frequently with officials of the Public Health Service in an effort to persuade them that pronouncements of physician shortages based on estimates in which hypotheses loom large will be distorted and used to support movements that will result in a lowering of the standards of medical education and ultimately of medical care. The Council is hopeful that as a result of these conferences, the Public Health Service appreciates the serious consequences that the approach they have adopted may have on the quality of medicine in the United States. The Council will continue to be interested in this problem. One of the objectives of the survey of medical education will undoubtedly be to determine how effectively present and projected facilities for medical education can meet the nation's demand for physicians.

Financial Medical Education

The maintenance of a high quality of medical education depends largely on the adequacy of the financial support provided the medical schools. The operating budgets of the medical schools are at present at an all time peak. A survey conducted by the Council revealed that the budgets of the medical schools, exclusive of the costs of patient

care and special research funds from outside sources, totalled more than $43,000,000 for the current academic year. Of this amount, students' fees provide only 28 per cent or less. For the purpose of comparison it may be pointed out that this is an increase of approximately $20,000,000 over the funds available to the medical schools twelve to fourteen years ago. Although some of this increase in financial support has been neutralized by the current inflation, the additional funds that have been made available have enabled almost every school to strengthen greatly its educational program during the past decade. It seems clear that at present medical education in the United States is at the most advanced point of development that it has yet achieved. There is grave concern, however, that unless additional financial support is provided further advance will be difficult and a regression in the quality of medical education may even be observed, particularly if inflation continues. The Council shares this concern and therefore arranged to devote one session of the Annual Congress on Medical Education and Licensure to the subject of the financial support of medical education.

The speakers discussed in detail the financial needs of the medical schools and agreed that additional support is clearly required. There was general agreement that, except for the possibility of emergency grants in aid, the medical schools should not seek federal support until the possibilities of private support have been completely exhausted. President Alan Valentine of the University of Rochester presented statistics to show that "there is in private pockets more than enough (money) to finance painlessly the added costs of medical education." He appeared to express the general sentiment when he stated, "We must act with private enterprise on private enterprise. In that effort lies the free and unfettered future of medical education and medical care."

On the same subject Chancellor Harvie Branscomb of Vanderbilt University stated, "Federal funds can be just as enervating to the medical schools as they have been in some other quarters. If the schools begin to look to the federal government to pay them out of their difficulties, I am afraid of the effect on them—not only that they will be reduced to a sort of dead level of uniformity but that much of the sense of initiative and development which has characterized these schools will tend to disappear. The temptation will be to wait for federal agencies to put the funds out to start new departments and new services."

There is already evidence that certain governmental agencies are prepared to urge the federal government to provide financial assistance to the medical schools. In a speech delivered Feb. 17, 1948 Mr. Oscar Ewing, Administrator of the Federal Security Agency, stated: "I am convinced that federal aid to medical schools and to medical students is essential if we are to have the doctors necessary for the health and well-being of our people."

The Council believes that the question of the future financing of medical education presents a serious problem. It has recommended to the Board of Trustees that the American Medical Association give serious thought to initiating a sustained campaign to inform the citizens of the nation that more generous support of the medical schools from private sources is urgently needed.

Supply and Distribution of Interns

A variety of circumstances has led to a progressive increase in the number of approved internships offered by the hospitals of the country during recent years. Some of the increase has resulted from the placing of additional hospitals on the list of institutions approved for internship training. Another major influence has been the fact that many hospitals now accept more interns than they did formerly. Numerous factors have contributed to this latter development. Some hospitals require more interns because they have enlarged their facilities. Certain hospitals need more interns than formerly because they have established programs for rotating interns with other hospitals. In other instances hospitals have increased their intern staff with a view to providing a more reasonable ratio of interns to patients.

Because of the growing importance of the problem, the Council's staff has been engaged during the past year in a study of the trends in the distribution of interns. This study, which was published in the Internship and Residency Number of THE JOURNAL, revealed that as of April 1, 1948, 748 hospitals in the continental United States approved for internship training offered a total of 8,609 individual internships. The hospitals reported that 6,902 interns were actually on duty, indicating that 80 per cent of the available internships were filled.

One third of all hospitals reported no internship vacancies, and another 22 per cent reported that they had more than three fourths of their full complement of interns. Twenty per cent reported that between one half and three fourths of their internships were filled. Twenty-five per cent of the hospitals had less than half of their internships filled, including 12 per cent which reported that they had no interns. Of the 87 hospitals that constituted this latter group, 57 had one or more residents, so that only 30 of the 748 hospitals studied were without any house staff. It would thus appear that while there are considerably more internships available than there are interns, a fairly broad distribution of interns obtains.

As might be expected, the survey revealed that the larger hospitals and the teaching hospitals had the fewest vacancies. Fifty-eight per cent of the teaching hospitals had their full complement of interns, while of the nonteaching hospitals only 26 per cent reported no vacancies. Conversely, only 4 per cent of the teaching hospitals reported no interns, while 14 per cent of the nonteaching hospitals were without interns.

Of the large nonteaching hospitals of four hundred and fifty beds or more, 47 per cent had their full complement of interns and none were without interns. On the other hand, of the nonteaching hospitals of one hundred and fifty beds or less, only 23 per cent had their full quota of interns and 21 per cent had no interns.

It is of interest to compare the present situation with that obtaining in 1939. In that year 734 hospitals in the United States offered 7,707 internships and reported that 7,204 (93 per cent) of the internships were filled.

The larger number of interns available reflects the fact that more men served a second year of internship in 1939 than in 1947. The smaller number serving a second year of internship in 1947 was due at least in part to the fact that approximately 3,000 physicians who had been enrolled in the A. S. T. P. and V-12 programs in medical school entered the armed services in that year at the completion of their first year of internship. The growing trend for physicians to enter residency training after one year of internship was another factor that led to a smaller number of second year interns. With respect to this development, it should be pointed out that many first year residents actually perform the same work previously carried on by second year interns. It is thus evident that a mere comparison of the numbers of interns available in 1939 and 1948 would be misleading in comparing the amount of internship service enjoyed by hospitals in the two periods under consideration.

This study has just been completed. The Council intends to review it carefully to see if the data obtained warrant any changes in the Council's policy with respect to the approval of internships. In considering the problem of the distribution of interns, the Council believes it important that full recognition be given to the principle that the primary purpose of the internship is to provide educational experience. The service that an intern renders to a hospital, while important, must be regarded as a secondary consideration. The Council feels very strongly that it would be unwise to support any policy that might impede recent graduates from obtaining training in those hospitals that are outstanding for the quality of their educational programs to the full extent that such hospitals can satisfactorily accommodate them.

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In approving hospitals for internship training, the Council has proceeded in the past on the principle that it should not attempt to limit or restrict the number of hospitals receiving its approval but should grant approval to any hospital that meets its minimum standards. In other words, the Council has encouraged a system of enterprise and free competition. While the Council believes that its standards of an approved internship have been appropriately high, it recognizes that considerable variation is to be found in the quality of the training offered by institutions on its approved list. The Council, therefore, should perhaps consider revising its standards with the intention of developing a smaller list of hospitals that offer internships that are definitely of a superior quality.

Uniform Intern Placement Plan

Three years ago the Association of American Medical Colleges formulated a plan establishing a uniform date for the appointment of interns by hospitals. This plan was endorsed by the American Hospital Association, the Protestant Hospital Association, the Catholic Hospital Association of the United States and Canada, and the Council on Medical Education and Hospitals.

The purpose of this plan was to eliminate the practice that a number of hospitals had fallen into of offering appointments to medical students early in their undergraduate course, in many cases even before they had completed the second year. It was the general belief of medical educators and hospital administrators that if this practice extended the whole situation with respect to internship appointments would become chaotic to the great disadvantage of both hospitals and prospective interns.

Adherence to the plan by hospitals has been of necessity on a voluntary basis. The only element of control is that exercised by the deans of the medical schools in not releasing students' credentials before a fixed date. In general, hospitals have abided faithfully by the provisions of the plan, although a small percentage are known to have offered appointments in advance of the specified date. While there have been criticisms of the plan, it has worked well on the whole, and no better mechanism has been suggested for accomplishing the purpose for which the plan was devised.

The following plan for appointments to internships beginning July 1, 1949 was adopted by the Association of American Medical Colleges in October 1947 and was subsequently endorsed by the Council on Medical Education and Hospitals and the other organizations referred to previously:

1. Applications and credentials to be submitted only through the dean's office to hospitals, with the date for filing applications and release of credentials by the medical schools set at Oct. 15, 1948. Credentials ordinarily will consist of an executed application blank and a letter from the dean but do not preclude such letters from members of the faculty as they may wish to write, unsolicited by the candidates.

2. Applicants may visit hospitals and be interviewed by hospital intern committees, but the hospital administration shall not commit the hospital or obligate the applicant, or potential applicants, before Nov. 15, 1948.

3. No intern appointments shall be made prior to Nov. 15, 1948 from applicants who are members of the senior class in medical school. Hospitals may decline an applicant at any time.

4. Applicants shall accept or reject hospital appointments before midnight of Nov. 18, 1948.

5. These regulations shall apply only to undergraduate medical students who have not completed the fourth year of their medical school courses.

Residency Training Program

A definite increase in the facilities for residency training is still taking place. In last year's annual report it was stated that as of April 1, 1947, 10,422 residency positions were available. By April 1, 1948 the figure had increased to 15,154. New applications for approval of residencies are still being received, so it seems likely that the maximum development of facilities for residency training has not yet been reached. There is no way to accurately determine the current demand for residency training beyond observing that few residencies are unfilled.

Because of the rapid expansion of residency training programs at the cessation of hostilities, a system of granting temporary approval to residencies was inaugurated early in February 1946 to hasten the opening up of suitable training opportunities for veteran physicians. Temporary approval is granted with the concurrence of the American Board concerned on the basis of data supplied by the hospital and other information about the hospital that is available to the Council and the Board. As soon as possible, residencies holding temporary approval are inspected by the Council; a decision is then reached as to whether to grant permanent approval or to withdraw approval. By April 1, 1948 a total of 1,136 residency programs had been granted temporary approval. A large number of these programs have already been surveyed by the Council in relation to permanent approval and the Council is making an extended effort to complete the survey of the programs still holding temporary approval at the earliest possible date. In recent months the staff of the Council, which was depleted during the war, has been augmented so that good progress should be made in this work. Even with the larger staff, however, it is unlikely that all residencies holding temporary approval can be surveyed in much less than two years.

Survey of Residencies in Orthopedic Surgery

During the course of the present year the Council collaborated with the American Orthopedic Association and the American Academy of Orthopedic Surgeons in a review of all the residencies in orthopedic surgery that had been approved on either a permanent or temporary basis by the Council with the concurrence of the American Board of Orthopedic Surgery. This study was financed by the American Medical Association as a pilot experiment designed to evaluate the system employed by the Council in appraising residencies.

This system may be summarized as follows: Hospitals seeking approval of residencies in the specialties make application to the Council on duplicate forms setting forth essential data with respect to the hospital and the particular service or services for which approval is desired. The staff of the Council then reviews the information set forth and any additional information that it possesses about the hospital and the service in question. The hospital and the service are then surveyed at an early date by a member of the Council's professional staff. A report of the survey is then prepared, together with the recommendation of the staff, and forwarded with one copy of the completed application to the American board for the specialty in question. The board, after reviewing this material, in turn submits its recommendation to the Council, which then determines whether or not approval is to be granted. When it is impossible to arrange for an early survey of a hospital requesting residency approval, one copy of the application form together with any additional information that is available is transmitted at once to the American board. When its recommendation has been returned, the Council then decides whether temporary approval should be granted until such a time as the hospital can be surveyed.

In general this plan has worked well and has appeared to be satisfactory. From time to time, however, the Council has thought that it would be of value to determine how well the evaluation of the residency programs in a given specialty made by its professional staff would compare with that made by men who have specialized in the particular field. An excellent opportunity to do this was afforded by the survey of residencies in orthopedic surgery. This survey was carried out by twenty-eight of the leading orthopedic surgeons of the country, each of whom visited and made a detailed report of the residency training programs in a group of hospitals located in an area other than his own.

The results of the survey were exceedingly gratifying to the Council, for they indicated that by using well defined objective criteria its professional staff had been able to form evaluations of residency training programs in a special branch of medicine that were substantially corroborated by experts in the field. The survey included 137 residency

services that had previously been given permanent approval by the Council and the American Board of Orthopedic Surgery following an inspection by the staff of the Council. After reinspecting these hospitals, the orthopedic surgeons recommended that approval be withdrawn from only 3, or 2.2 per cent of the total. As would have been expected, it was found that a somewhat higher percentage of those hospitals which had not been previously inspected and which held only temporary approval from the Council and the Board were not judged worthy of continuing approval. Of the 101 residencies holding temporary approval, it was recommended that approval be withdrawn from 14.

The Council realizes that if similar surveys were made in other fields, such extremely close agreement might not always be found. However, this experiment would seem to indicate clearly that the present system of evaluating residencies, which in almost all specialties includes consultation and the exchange of recommendations with the American board in question, is a sound and practical one. While some slight advantage might accrue from having on the staff of the Council a specialist in each branch of medicine, such an arrangement is obviously not practical and, to judge from the results of this study, would not appear to be necessary.

Postgraduate Courses

Interest in postgraduate courses is at an all time peak and appears still to be increasing. During the year July 1, 1947 to June 30, 1948 a total of 1,679 courses are being offered. Last year the reported attendance at postgraduate courses totalled nearly 60,000. State medical socities, medical schools and hospitals are all active in providing leadership in developing this increasingly popular undertaking in medical education.

Hospital Service in the United States

During the past year the Council conducted its annual survey of hospital facilities in the United States. The report of this study reveals a substantial increase in the number of admissions and hospital births in 1947 as compared with the preceding year. The present total of 15,829,514 admissions is an increase of 676,062 in comparison with 1946 but is less than the all time high of 16,257,402 reported in 1945. The principal gain was in the nongovernmental general hospitals, whose admissions increased by 1,038,905 in 1947. The net gain by general hospitals, however, was only 613,687, inasmuch as the admissions in governmental general hospitals were reduced by 425,218. The governmental hospitals as a group showed a decrease of 393,819 admissions, whereas the nongovernmental hospitals had an increase of 1,069,881. In the general hospitals the admissions increased from 14,051,508 to 14,665,195; in the psychiatric institutions from 271,209 to 291,954, while in the tuberculosis sanatoriums there was a slight decrease from 99,741 to 99,080.

Hospital births have shown a steady increase each year with the exception of the wartime year 1944. Yet it was not until 1946, when 2,136,373 were reported, that the number of births in hospitals exceeded 2,000,000. This total is now far surpassed, however, as evidenced by the present report of 2,837,139 hospital births for 1947. Although increased numbers were reported in both the governmental and nongovernmental hospitals, the gain was more pronounced in the latter group, which has a total of 2,395,557 births as compared with 1,801,427 in 1946. Over 97 per cent of the births reported in the present survey occurred in general hospitals.

The number of beds in the hospitals registered by the American Medical Association total 1,425,222, including 1,030,205 in government hospitals and 395,017 in the nongovernmental group. The governmental hospitals, which had a reduction of 273,984 beds in 1946, showed a further decrease of 52,529 in 1947. The nongovernmental hospitals reported a net increase of 9,037. The average bed occupancy increased in all governmental and nongovernmental classifications except in the federal group, where the percentage of beds occupied decreased from 80.6 in 1946 to 78.9 in 1947. As a group the governmental hospitals showed an occupancy rate of 87.8 per cent as compared with 86.6 per cent in the previous year. The corresponding figures for the nongovernmental hospitals are 79.1 and 78.1 per cent, respectively. There was little change in the occupancy rate in the general hospitals, but increases were noted both in the psychiatric and the tuberculosis groups. During the last year the average length of stay in general hospitals was reduced from 12.9 to 11.4 days. In the governmental general hospitals the patients remain an average of 19.5 days, whereas in the nongovernmental general hospitals the average length of stay is only 8.7.

The tremendous volume of hospital service in the United States is also reflected in the average daily census of 1,217,229 reported in 1947. The general hospitals, with 93 per cent of all patients admitted last year, maintained an average daily census of 456,761. The psychiatric hospitals, however, with less than 2 per cent of the admissions, had an average census of 651,578, or 53 per cent of the daily patient load in all registered hospitals.

The total number of patient days in the 6,276 hospitals registered by the American Medical Associatoin in 1947 was 444,288,585.

Approval of American Board of Physical Medicine

During the past year the American Board of Physical Medicine completed its organization and was officially approved by the Council on Medical Education and Hospitals. This board is the sixteenth examining board in the specialties to be approved by the Council. The board has already begun to examine and certify physicians specializing in the field of physical medicine.

Annual Congress on Medical Education and Licensure

The forty-fourth Annual Congress on Medical Education and Licensure was held under the auspices of the Council on Medical Education and Hospitals and the Federation of State Medical Boards in Chicago in February 1948. Papers were presented at this congress on such timely and important topics as the financing of medical schools, the relationship of medical schools to teaching hospitals, the status of legislation for a National Science Foundation, the undergraduate and graduate training of general practitioners, the teaching of the clinical aspects of nuclear energy, the use of medical motion pictures and the teaching of physical medicine and rehabilitation.

Liaison Committee of the Council and the Advisory Board for Medical Specialties

For several years the Council has held annually a joint meeting with the Advisory Board for Medical Specialties. These meetings have been helpful in reviewing problems of mutual concern to the two organizations. During the past year both organizations expressed the belief that even more effective coordination could be achieved if a liaison committee were created that would meet frequently and thus provide a mechanism for a more continuous program of consultation and cooperation. Such a committee, composed of three members from each organization, was established and held its first meeting in February 194b. It is planned that this committee will hold at least three meetings during each year. Among other objectives this committee will attempt to define more clearly the relationship between the Council and the Advisory Board and between the two bodies and the individual American Boards. This committee should also be in a position to make constructive suggestions with respect to many of the general problems related to the specialty movement.

Liaison Committee of the Council and the Association of American Medical Colleges

In February 1942 the Board of Trustees of the American Medical Association authorized the establishment of a liaison committee of the Council on Medical Education and Hospitals and the Executive Council of the Association of Amer-

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ican Medical Colleges. This committee, which is advisory to the two associations, has continued to meet two or three times annually to consider problems of mutual concern to the two organizations. This arrangement has been of distinct benefit to both bodies, since it has made possible joint action in important matters pertaining to medical education. Inspections of medical schools have been carried out jointly by the two organizations; joint reports of inspections are submitted to the schools, and identical action has been taken by the two groups in cases that involve the status of a medical school.

Liaison with Government Services

The growing interest of the Army, Navy, United States Public Health Service and the Veterans Administration in developing programs of graduate medical training has resulted in the Council's formation of a close and continuing liaison in an advisory capacity with these services. The relationships have been most cordial, and the Council is pleased to observe that the different services are making effective progress in establishing soundly conceived and carefully organized programs of residency training and postgraduate courses. The government services will undoubtedly find that the attraction of such opportunities for professional development will be of real benefit in recruiting the medical personnel of which they stand in need.

Collaboration with Other Agencies

The Council has continued to collaborate with numerous other agencies in the field of health, medicine and education. These conjoint activities have been varied in nature and have involved the Secretary and other members of the staff of the Council. These cooperative enterprises have included participation in conferences, meetings of advisory committees and joint sessions.

Foreign Medical Schools

Last year's report mentioned the lack of reliable information in this country concerning the present status of foreign medical schools and also mentioned that a committee of representatives from various groups with an interest in this problem had recommended that a survey be made to determine the location and certain basic factual data concerning every existing foreign medical school. During the present year this survey has been initiated. With the cooperation of the Division of International Exchange of Persons of the State Department a questionnaire has been prepared and distributed to each American diplomatic mission abroad. It is hoped that representatives of the state department will arrange to have a questionnaire filled out supplying basic information for each medical school in countries with which the United States has diplomatic relations. The completed questionnaires will be returned to the Council for study and preservation in its permanent files.

The Council has also received valuable assistance in securing information about foreign medical schools from the reports which American physicians traveling abroad have generously furnished the Council concerning medical schools that they have visited during the course of their travels.

A second meeting of the Committee on Foreign Medical Credentials consisting of representatives from the Association of American Medical Colleges, Federation of State Medical Boards, National Board of Medical Examiners, United States Office of Education, State Department and the New York State Education Department was called by the Council in February 1948, and further progress was made in arranging for the collection and exchange of information concerning foreign medical schools. While progress in this field will of necessity be slow, it would appear that in the course of time a significant body of information can be collected concerning foreign medical schools that will be of great value to the several groups in this country which must evaluate the training of students and graduates from these schools.

Medical Schools Visited

During the calendar year 1947 the following medical schools were visited for consultation, survey or other purposes:

Georgetown University School of Medicine
St. Louis University School of Medicine
Washington University School of Medicine
Baylor University College of Medicine
Southwestern Medical College
University of Texas Medical Branch
West Virginia University School of Medicine
Dalhousie University Faculty of Medicine

Inspection of Hospitals and Technical Schools

Inspection of hospitals and technical schools made by the Council during the year 1947 may be summarized as follows:

Intern Training	45
Residencies and fellowships	189
Intern training and residencies	14
Registration	16
Technical schools	6
Spas	3
Total	273
Individual residencies and fellowships investigated	625

Summary of Hospitals and Technical Schools

Figures for approved hospitals and technical schools with changes occurring during the calendar year 1947 are as follows:

Registration of Hospitals	
Hospitals registered, Jan. 1, 1947	6,280
New institutions registered during 1947	176
Closed or transferred to unclassified file	144
Hospitals registered, Dec. 31, 1947	6,313
Internship Approval	
Hospitals approved for intern training, Jan. 1, 1947	811
Approved during year	30
Removed from approved list	19
Hospitals approved for intern training, Dec. 31, 1947	812
Residency Approval	
Hospitals approved for residency training, Jan. 1, 1947	956
Approved during year	151
Removed from approved list	21
Hospitals approved for residency training, Dec. 31, 1947	1,086
Clinical Laboratory Schools	
Approved schools, Jan. 1, 1947	393
Approved during year	15
Removed from approved list	0
Approved schools, Dec. 31, 1947	308
Medical Record Librarian Schools	
Approved schools, Jan. 1, 1947	11
Approved during year	0
Removed from approved list	0
Approved schools, Dec. 31, 1947	11
Occupational Therapy Schools	
Approved schools, Jan. 1, 1947	18
Approved during year	4
Removed from approved list	0
Approved schools, Dec. 31, 1947	22
Physical Therapy Schools	
Approved schools, Jan. 1, 1947	25
Approved during year	2
Removed from approved list	1
Approved schools, Dec. 31, 1947	26
X-Ray Schools	
Approved schools, Jan. 1, 1947	161
Approved during year	22
Removed from approved list	0
Approved schools, Dec. 31, 1947	183

Council Publications

Regular publications of the Council during the year 1947 included:

Hospital Service in the United States
State Board Number of THE JOURNAL
Medical Education in the United States
Proceedings of the Annual Congress on Medical Education and Licensure
Postgraduate Courses for Veteran and Civilian Physicians
Approved Examining Boards in Medical Specialties (A Summary of the Requirements for Certification Established by the American Boards)
A History of the Council on Medical Education and Hospitals
Choice of a Medical School
Approved Colleges of Arts and Sciences
Approved Internships
Approved Residencies and Fellowships in the Specialties
Schools for Clinical Laboratory Technicians
Schools for Physical Therapy Technicians
Schools for Occupational Therapy
Schools for Medical Record Librarians
Schools for X-Ray Technicians

The Council also has reprinted for distribution a number

of articles dealing with questions relating to the Council's work and responsibilities. In addition, the Council has published numerous statements in THE JOURNAL from time to time concerning current problems.

Tribute to Dr. John H. Musser

The Council suffered a very real loss in the death of Dr. John H. Musser on Sept. 5, 1947. Dr. Musser was appointed to the Council in 1934 and at the time of his death had just commenced his third term of service. Dr. Musser rarely missed a meeting of the Council. In his deliberations he was unmistakably honest and sincere. He expressed his views with conviction and firmness and, although sympathetic with medical schools and hospitals that were attempting to better their position, was intolerant of inefficiency and chicanery. The Council has faced many serious problems in the past thirteen years. Dr. Musser helped to meet them wisely and courageously. The American Medical Association and, indeed, all American Medicine, owe his memory an unforgettable debt of gratitude.

New Council Member

Dr. Virgil P. Sydenstricker of Augusta, Ga., was appointed by the Board of Trustees to fill the vacancy on the Council created by the death of Dr. Musser until the annual meeting of the House of Delegates in 1948.

Secretary of the Council

Dr. Donald G. Anderson of Boston, who was appointed by the Board of Trustees to succeed Dr. Victor Johnson as Secretary of the Council, joined the Council staff on July 1, 1947.

Professional Staff Changes

Dr. Edward K. Reid of Rome, N. Y., Dr. Edward H. Leveroos of Superior, Wis., and Dr. William W. Corbett of Baton Rouge, La., have been appointed to the professional staff. Dr. Frode Jensen resigned from the staff to become director of graduate and postgraduate medical education at the University of Colorado School of Medicine.

Appreciation

In carrying out its program the Council on Medical Education and Hospitals has enjoyed the fullest cooperation of numerous institutions and organizations, for which it wishes at this time to record its sincere appreciation. The Council is particularly grateful to the officers, trustees and members of the House of Delegates of the American Medical Association for the support and cooperation that they have given to the Council in its many activities.

Respectfully submitted,

H. G. WEISKOTTEN, Chairman.
HARVEY B. STONE.
REGINALD FITZ.
RUSSELL L. HADEN.
WILLIAM S. MIDDLETON.
VICTOR JOHNSON.
VIRGIL P. SYDENSTRICKER.
DONALD G. ANDERSON, Secretary

REPORT OF COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

Interim Report at Cleveland Session

The Council on Scientific Assembly presented an interim report to the House of Delegates at the Cleveland Session Jan. 5, 1948 covering the activities of the Council up to that time. The report called attention to the action of the House of Delegates in June 1947 regarding the creation of a Section on Diseases of the Chest. This portion of the report was referred to the Reference Committee on Amendments to the Constitution and By-Laws, which, recognizing the possible conflict of interpretation between the Constitution and the By-Laws with respect to the creation of new Sections, referred the matter by resolution to the Committee to Study Revision of the Constitution and By-Laws. The resolution was adopted by the House on Jan. 6, 1948.

The Council on Scientific Assembly appreciates the action of the House in its attempt to make the functions of the Council more definitive and will welcome any changes in the Constitution and By-Laws that lead to this end.

Cleveland Interim Session

The Interim Session held in Cleveland January 5 to 8, 1948, presented many problems to the Council. The General Scientific Meetings, arranged with great care and addressed by eminent speakers, were in general poorly attended. The Council has some doubt regarding ability to keep up the highest standard of program planning if more physicians do not attend the lectures at future interim sessions. Even when the meetings were arranged so as not to interfere with sessions of the House of Delegates, few delegates attended. The Council noted, moreover, that the attendance at the Scientific Exhibit was not good and that the entire session, except for the meetings of the House of Delegates, was not entirely satisfactory.

The reasons were not difficult to ascertain: poor timing of the meeting; location in a city already well supplied with frequent and first class postgraduate educational programs; a growing movement to organize general practioners' societies outside of the American Medical Association; the concurrent session of the Congress on Industrial Health; the growth of state programs of a similar nature, and the partial failure to build up an attendance in advance of the meeting.

Interim Session in St. Louis

Plans to insure a successful Interim Session in St. Louis are being given consideration by the Board of Trustees and the Council. The program probably will be built on a basis of fewer formal lectures and more practical demonstrations, small conferences with limited attendance, the use of special features such as television, audience participation programs and evening programs, with motion pictures and other forms of instruction.

Chicago Annual Session

The program for the General Scientific Meetings, prepared by the Council on Scientific Assembly, is offered as part of this report.

Section on Miscellaneous Topics

In the Section on Miscellaneous Topics three sessions for the 1948 Annual Session were approved, one each on Diseases of the Chest, History of Medicine and Allergy. A chairman and secretary for each session was appointed by the Council in accordance with the By-Laws.

An additional session on Physical Medicine was approved by the Council, following sanction by the Board of Trustees, creating, for the Chicago Session, a fourth unit in the Section on Miscellaneous Topics, and a chairman and secretary were appointed for this session.

Changes in Constitution and By-laws

The Council met with the Committee to Study Revision of the Constitution and By-Laws in Cleveland Jan. 5, 1948 and made certain recommendations for revision of the Constitution and By-Laws which will clarify the duties of the Council on Scientific Assembly. The Council has been assured that its recommendations will be incorporated in the revised Constitution and By-Laws which is to be presented to the House of Delegates for action at the Chicago Session.

Section Reorganization

A suggestion was made to the Council that, instead of each section being represented by a delegate in the House of Delegates as is now the case, there be formed a Scientific Representative Assembly of section delegates, each section electing one delegate to that group to consider the

problems of the scientific sections, that the Scientific Representative Assembly so formed elect five delegates to represent the scientific sections in the House of Delegates and that there be no more than five delegates from the sections no matter how many sections are established. The Scientific Representative Assembly could also act as a committee to bring up to the Council on Scientific Assembly problems affecting the sections.

The Council presents this suggestion to the House of Delegates for consideration.

Respectfully Submitted,

HENRY R. VIETS, Chairman.
CHARLES H. PHIFER.
LEONARD W. LARSON.
STANLEY P. RIEMANN.
LUKE B. JACKSON.
R. L. SENSENICH, President-Elect ex officio.
MORRIS FISHBEIN, Editor ex officio.
GEORGE F. LULL, Secretary ex officio.

REPORT OF THE COUNCIL ON MEDICAL SERVICE

To the Members of the House of Delegates of the American Medical Association:

The original objectives of the Council on Medical Service continue to guide the Council in its activities. The purpose and functions of the Council have been specifically set forth by the House of Delegates. They are briefly, to follow the trends in medical service, to interpret these trends to the members of the American Medical Association, and to make suggestions as to improvements. It has fallen to the Council to implement the functions and activities of the Association in a variety of ways. In this capacity the members of the Council have often approached tasks with the understanding that if something worth while was created or started it might well be passed on or transferred to some other department or organization. To a certain extent, then, the Council is a testing ground. After testing activities and projects it has been found that some can best be retained and carried on by the Council, some are more suitable to joint efforts with others and some are the proper functions of others.

Community Leadership

Emphasis during 1948 is being placed on community leadership in health problems by the component county medical societies and to a lesser extent by the constituent state medical associations.

County Medical Society Survey.—The first step in in community leadership in health problems is to determine the capacity of county medical societies for promoting this leadership. In order to accomplish this, a pilot questionnaire was sent to two hundred and fifty selected county societies in the forty-eight states. The results of the pilot questionnaire are interesting and show a variety of activities. Full tabulation will be completed and mimeographed when all the answers have been received.

State Medical Society Survey.—As with the county medical societies, it was necessary to know more about the constituent state medical associations. A questionnaire has been forwarded to the secretary of every state association for the purpose of learning more about activities and work of their organizations in the health care field. The information gained from both this and the county medical society questionnaire will enable the Council to act as a clearing house on medical society activities. The demand for this type of service is continually increasing. Medical societies are rapidly expanding their activities and are anxious to learn of existing experiences.

Health Councils.—Since the Council on Medical Service first reported to the House of Delegates on health councils in July 1946, the subject has become of widespread interest. This interest has been furthered through the News Letter, regional conferences, a special brochure and correspondence.

Health Councils seem to be an excellent medium through which community leadership in health problems may be attained. However, the term health council is used in a variety of ways. It means different things to different persons, and final determination of the use of the term will require further consideration of the entire program.

At present there are three types of general health councils: state health councils, metropolitan health councils and rural health councils. The primary purpose of all three types is planning and coordination. The three types are organized in a variety of ways and for a number of different purposes. Best known of the state health councils are those made up of professional groups (medical, dental and pharmaceutical); those composed of voluntary health agency representatives and those set up by official action of the state government. Examples of the first are the health councils in Illinois and California; of the second, the health councils in Virginia and Vermont; and of the third, the health council in Indiana.

The metropolitan health councils are those found in cities, usually 50,000 or more in population. These are generally composed of representatives of voluntary health agencies and of the professional societies. Many of them are sponsored and financed by the Community Chest.

The community or rural health councils are probably the latest type to develop. Here the efforts of the Council on Medical Service are being coordinated with those of the Association's Committee on Rural Medical Service.

The term health council is used, in addition, to designate more limited groups such as school health councils and even public health units or departments. The functions of such councils in any area must necessarily be integrated with those of the general health council. There is also a national organization known as the National Health Council, which has recently sponsored a conference to promote local health departments.

The Council's efforts in this field are primarily devoted to determining the facts, reporting and interpreting these facts to the members of the medical profession, and arousing an interest on the part of medical societies in taking more active part in the work of the health councils.

Regional Conferences

The Regional Conferences continue to perform a much needed function—the exchange of ideas between the constituent and component medical societies and the American Medical Association. Originally, participation in the conference was limited to the state society committees on medical service, public relations and legislation. Last year invitations were sent to other state society committees, and more recently, at the Northwest Regional Conference and the Rocky Mountain Regional Conferences, all members of the participating state societies were invited to attend and join in the discussions. Another development during 1947 was the joint sponsorship of the Regional Conferences by the Council on Medical Service, the Council on Industrial Health and the Committee on Rural Medical Service. The purpose of this move is twofold: first, to provide

a better picture of the work of the Association and second, to widen the scope of subjects discussed. Two regions have now organized permanent conference committees. These are the Middle Atlantic States and the Southeastern States.

News Letter

The House of Delegates at the June 1947 Annual Session recommended that the Board of Trustees investigate the possibility of extending the News Letter mailing list to include all Fellows of the American Medical Association, and if this is impossible that at least it be sent to all officers of component county societies. It has not been possible to include all Fellows of the Association. However, the county medical societies are now receiving the News Letter and several state medical associations have offered to mail copies of the News Letter to their membership, provided the Council could supply a sufficient number of copies. At present approximately 13,000 persons receive it monthly.

The News Letter continues to elicit favorable comments from all sections of the country. So many interesting activities of medical societies have warranted reporting that last fall the News Letter was increased to eight printed pages. However, recent printing difficulties have necessitated a return to mimeographing. Temporarily two mimeographed Letters are issued monthly in place of the larger printed Letter.

Special Projects

Fund-Raising Groups.—Physicians throughout the nation are feeling the pressure of the increasing demand made on them by the numerous so-called voluntary health organizations. For many years physicians have cooperated with the programs devised by the National Tuberculosis Association, the American Red Cross and the National Society for Crippled Children and Adults. Little effort was made to devise a program that would be fair to the physician as well as the public. More recently the profession has been called on by the American Cancer Society to make its cancer detection program effective. Here, however, the Board of Trustees and the Council on Medical Service entered the picture and worked for a realistic policy which included the county medical society and the physician. As a result, the American Cancer Society's program has produced many local experiments, with the full approval of the county medical societies concerned and designed to fit local opinion and needs. Presently, if the trend continues, the physician will be confronted with even greater demands. Programs are in process by the American Heart Association, the American Diabetes Association and others.

In view of this trend, the Council proposes to determine the success that country medical societies have had in serving and coordinating the various programs. Only in this manner will it be possible to set forth policies to be used as guide posts for other county medical society relations with the voluntary health organizations.

Assistance at the national level would aid materially in protecting the individual physician against undue demands on the part of the voluntary health agencies. The Board of Trustees has recognized this in several instances. However, the Council recommends to the House of Delegates that further effort be made to obtain direct representation of the Association on all national voluntary health organizations. The Council further believes it would be helpful to sponsor a coordinating committee, composed of representatives of all such national groups, for the purpose of developing policies applicable at the county medical society level.

U.M.W. Health and Hospital Fund

The Council on Medical Service and the Council on Industrial Health have reported at other sessions on the status of the United Mine Workers Health and Hospital Fund or program. The survey made by Admiral Boone gave hopes that something might be accomplished along the lines suggested by the Council in its report to the House of Delegates in June 1947. However, Mr. Lewis has confused the issue somewhat by ignoring the autonomy of this program and for all practical purposes joining it to the Welfare and Retirement Fund program. As a result, the possibility of local plans developed through joint cooperation and financed by both the miners and operators seems eliminated, and in their stead is a national program financed by a national fund derived from the 10 cent per ton impost on coal.

The Fund, however, has an able administrator in Dr. R. R. Sayers. The Council has suggested to him that trial plans be developed in several areas by competent teams composed of able men in various fields such as prepayment, preventive medicine, hospitalization, sanitation, housing and health education, the purpose being to arrive at a policy under which local needs may be determined and met without complete recourse to a national fund or plan. The needs, ability to finance and even the ability to absorb or utilize a health program differ in the various mine areas. This was the basis of the Council's original recommendations and should be the basis for further progress in any union health plan.

An important recent development in the field of labor welfare funds is the decision of the joint House-Senate Committee on Labor Management Relations to investigate the status of such funds under the Taft-Hartley Act. This law states that the detailed basis on which payments are made from such funds shall be specified in a written agreement and provides for equal employer-employee representation in the administration of labor welfare funds.

Group Practice

Interest in group practice has increased during the past two years, particularly among the returning servicemen. The Council has followed the discussion of group practice in the various medical journals.

In June 1947 the House of Delegates approved a resolution referring the study of the question of group practice to the Board of Trustees and suggesting that the Bureau of Medical Economic Research, the Judicial Council, the Council on Medical Service and the Bureau of Legal Medicine and Legislation cooperate in the project. The Board of Trustees, in turn, referred the matter to the Council on Medical Service and requested the appointment of a subcommittee on Group Practice: Following these actions the Council requested a conference of headquarters personnel representing the aforementioned Councils and Bureaus. At that time details of the study were given to the Bureau of Medical Economic Research. The Council on Medical Service selected Drs. Donald C. Balfour, Jesse D. Hamer and Edwin J. Grace to serve on this subcommittee; others may be added in the future.

It is important to note that when the Trustees referred the question of a study on group practice to the council, the proposed subcommittee and the Judicial Council were directed to draw up standards. As the problem of standards was not considered in the original resolution of the House of Delegates, the Council has discussed at length the possibility of setting standards for group practice and has requested the subcommittee to keep the problem of standards in mind during the study. Further reports on this subject will be made during or on completion of the study.

Compulsory Sickness Insurance

Public interest in compulsory sickness insurance continues unabated. Requests for information continue to pour in from physicians, students and others preparing speeches and articles or just interested in the subject. During 1947 and the first three months of 1948 over 12,000 pamphlets and reprints were mailed out in answer to such requests.

The Council wishes to call the attention of the House of Delegates to a serious situation, the complete absence in libraries—school, college and public—of reference material presenting arguments against compulsory sickness insurance. Correspondence reveals many, many persons willing to oppose government control of medical care but handicapped by lack of sources to which they may turn for arguments. The Council has approached the problem in four ways: first, by maintaining a supply of various reprints and pamphlets for distribution to students and others; second, by preparing reference material in bound volume form suitable for library use; third, by making available "loan kits" on the subject for use in cases where detailed reference data are needed and fourth, by preparing and making available a bibliography on sickness insurance publications. Literally thousands of articles, pamphlets and speeches are written annually in opposition to government medicine. Most of them are a repetition of nebulous arguments, many of which are thoroughly sound and extremely important but no longer sufficient to satisfy students, speakers or writers. Basic facts, figures and specific information are too often missing. In an effort to remedy this the Council staff is reviewing all literature on the subject with the view to preparing a question and answer booklet suitable to all but the research student. This should be placed in every college, medical school and hospital library. Supplying public and high school libraries is too expensive a job for the present.

Cash Sickness Benefits

The House of Delegates approved the principle of cash sickness benefits in 1938. Since that time interest in the subject, particularly on the part of state legislatures, has developed rapidly. Fifty proposals for cash sickness and related benefits were introduced in state legislatures in 1947. Of this number, twenty-five provided for specific cash sickness benefits to be paid out of a monopolistic state fund, with affiliation compulsory. The implications of this type of program warrant serious consideration. The House of Delegates recognized this when it approved a resolution requesting "a complete study of the existing and proposed compulsory temporary disability compensation programs." The resolution was referred to the Council on Medical Service, and since then the staff has followed closely the developments in various states. These developments were reported to the House in June 1947 and in January 1948.

The Council has postponed a detailed study until experience from more than one type of program can be obtained and compared. The Rhode Island (monopolistic) plan has been in operation over five years, the California (optional) plan over one year and the Railroad Retirement Board (national) plan almost a year. Studies of these three, together with a number of the proposed plans, should provide a reasonable appraisal of the subject. A study of the Rhode Island plan has recently been completed by Miss Elizabeth Wilson and arrangements have been made to have access to the results of the study. Studies of the two other plans will be undertaken in cooperation with the Bureau of Medical Economic Research, unless the Council discovers existing studies comparable to that of Miss Wilson.

The Council is primarily interested in the medical aspects of cash sickness benefit programs and will make every effort to arrive at definite recommendations.

Prepayment Development of 1947

Topping the early predictions of the Council, enrolment figures for the medical society and Blue Cross-sponsored medical care plans give evidence of totaling 7,500,000 as of Dec. 31, 1947. Enrolment as of Dec. 31, 1946 totaled 5,000,000 and on Dec. 31, 1945 it was 2,840,000. The picture today shows more than 7,500,000 persons covered, over 50 per cent enrolment growth in 1947, over 95 voluntary plans in operation in forty-two states and the remaining six states and the District of Columbia in the organization stage. Another and even better picture is presented by over-all voluntary health insurance developments. A recent survey reveals the extent to which the American public is at present insured against hazards such as loss of income due to disability and enjoys the benefits of hospitalization, and surgical and medical care insurance. The following summary shows the number of insurance agreements in effect for the various types of benefits: approximately 30,000,000 persons (one half of the working population)—loss of income due to disability; over 40,000,000 —hospitalization; approximately 17,000,000—surgical benefits, and over 5,000,000—medical benefits.

Plan Descriptions and Statistics.—The individual prepayment plans are making constant changes in benefits, costs and so forth. Changes are necessary in order to meet changing needs.

The Council staff is in the process of compiling all the latest changes as well as preparing descriptions of the new plans developed since the 1947 revision of the "Voluntary Prepayment Medical Care Plans" brochure. In addition, the Council is revising the statistical charts and graphs which were used as a supplement to the prepayment brochure. These revised charts and graphs will make the Council's prepayment exhibit more current.

Cooperation with Other Agencies.—In an effort to avoid unnecessary duplication of work, the Council staff makes every effort to cooperate with other agencies. The data assembled by Associated Medical Care Plans and the Blue Cross Commission are limited to that of plans claiming nonprofit status. As the American Medical Association recognizes all voluntary programs, certain basic research is necessary in addition to cooperation with other groups.

Seal of Acceptance.—The Seal of Acceptance of the Council on Medical Service has been granted to sixty of the ninety-nine plans now in operation. These plans represent a wide variety of types, sizes and experiments in the voluntary field of prepayment medical care. The Standards of Acceptance developed by the Council on Medical Service to be used as a guide in evaluating prepayment medical care plans were designated as preliminary standards. Insurance company representatives, through the Health Insurance Council, have suggested certain amendments to the preliminary standards. These proposed changes are being considered by the Council.

Free Choice of Physician.—The Report of the Judicial Council at the Annual Session of the House of Delegates in 1947 included pertinent remarks in regard to the free choice of physician. While the remarks referred to medical care in general, they were particularly applicable to prepayment plans. The Council on Medical Service studied the Judicial Council's statement and prepared a written discussion of the remarks. The entire application of the principle of free choice of physician and hospital

as it applies to prepayment plans is not yet entirely clear to the Council. The extent to which "free choice of physician" may possibly be limited in the various plans has been reviewed and will be discussed further with the Judicial Council.

Another matter submitted to the Judicial Council for consideration was the approval of plans by medical societies. The Standards of Acceptance provide for approval by either a state medical association or county medical society. In considering several local plans, the question arose as to whether they must have state as well as county society approval. It was the Judicial Council's opinion that wherever local prepayment plans operate within a state, these local plans may be accepted by the Council on Medical Service provided they have the approval of the county medical society or societies in whose area they operate and provided they are not disapproved by the state medical society. In other words, these local plans need not necessarily have the approval of the state society, but they must not be disapproved. The Standards will be amended to clarify this matter.

Health Insurance Council.—The insurance organizations which originally participated in the Joint Conference Committee on Health Insurance have renamed the group the "Health Insurance Council." At the outset, the insurance groups were to meet with representatives of the American Medical Association to discuss the application of insurance principles to the economics of medical care. In addition it was desired to bring together all voluntary agencies interested in the extension of prepayment insurance to a greater portion of the American people. The opening sentence of the purposes of the Health Insurance Council states: "The programs providing health insurance coverages, including medical, hospital and surgical expense benefits, are recognized as being in the public interest."

The Council's purposes provide further:

To the end that such voluntary coverages may better serve the needs of the insuring public, the Health Insurance Council is available to such groups:

1. For conference regarding their sponsorship or endorsement of voluntary plans for insuring medical, hospital or surgical expenses to be underwritten by private insurers.

2. For the consideration of means for improvement in the effectiveness of such voluntary plans.

3. As a source of factual information concerning the extent and nature of health insurance coverages.

On Feb. 10, 1948 representatives of the Health Insurance Council met with a committee of the Council on Medical Service in furtherance of its aims.

Insurance Claim Blanks Simplified.—Since the Council approved two simplified insurance claim forms, three other simplified forms have been prepared as the result of combined efforts of insurance representatives and physicians. While no specific approval has been requested for the newer forms, this shows that both groups are active in eliminating nonessential questions when requesting medical information to be used in appraising insurance claims.

Medical Cooperatives.—The Council's study of consumer-managed voluntary health service plans is nearing completion. To date one hundred and sixty-nine such plans have been found in forty-two states and the District of Columbia. All these plans are not cooperatives, but they are all consumer managed. Sixty-two of the one hundred and sixty-nine plans have reported a total enrolment of 1,020,853 persons.

Special Prepayment Exhibit.—The success of the prepayment part of the Council's exhibit at the Annual Session in Atlantic City, N.J., prompted the preparation of a portable display for use during meetings of state medical associations. The exhibit consists of a large map showing the spread of prepayment plans and six charts and graphs picturing plan growth, enrolment, claim experience and administrative costs.

The Washington Office

It is gratifying to report that none of the health legislation introduced into the Eightieth Congress which in the opinion of the American Medical Association challenged the best interests of the people was enacted.

Every opportunity afforded the Association by Committees and Committee members to testify at public hearings, sit in conferences and discuss individual merits of legislation to propose additions or modifications of the public health laws was accepted. The cordiality with which the contributions of representatives of the Association were received was most gratifying. Although Congress will not adjourn for another couple of months it is not likely that either of the two national health bills will be passed. The Senate Committee is still taking testimony from witnesses, and the reference committee in the House of Representatives has not started its hearings.

S. 140 (Taft), which proposes to create a Department of Health, Education and Security with cabinet rank, was reported out by the Senate Committee on Labor and Public Welfare, but repeated attempts to have it advanced to the floor have failed through objections offered by senators. The present draft of the bill provides that it shall be administered by a Secretary of Health, Education and Security, appointed by the President, who shall have three undersecretaries, each appointed by the President--one for health, one for education and one for security. Nothing in the bill requires that the Undersecretary of Health shall be a doctor of medicine. Provision is made for a Bureau of Health which shall be administered by the Undersecretary of Health who shall have charge of the health functions and activities of the department. The Secretary is authorized to appoint advisory committees, whose members shall be qualified persons not otherwise employed by the federal government. To the Bureau of Health shall be transferred the U. S. Public Health Service, the Food and Drug Administration, Freedmen's Hospital and Saint Elizabeths Hospital.

S. 1290 (Saltonstall) and H. R. 1980 (Howell) in their original form were alike in providing for assisting the states both with subsidy and personnel for the medical examination of school children. At the hearing on the Senate bill, an elaborate amendment was offered which would extend the service to all children and youth of school age. Provision was also made for instruction in physical education. The Association's witness took exception to the provision that treatment should be made available without regard to the ability of parents to provide it. Objection was also raised to the fact that no provision is made for consultation between the school physician and the family and the family physician. The witness for the Association recommended that the states be encouraged to carry on the work without federal interference and that opportunity be provided for appeal to the courts when differences arise between the state administrative body and the Federal Security Administrator.

S. 1679 (Murray) and H. R. 4303 (Dingell) provide for a national program of retirement, survivors and extended disability insurance similar to sections of S. 1050 (Seventy-Ninth Congress).

S. 2189 (Saltonstall) and H. R. 5644 (Dolliver) and H. R. 5678 (Priest)-the local Public Health Services Act of 1948-provide for grants-in-aid to assist the states in the development and maintenance of local public health units. The aid is to be administered through the Surgeon General acting with the approval of the Administrator of the Federal Security Agency. The states are to submit their plans, and in order to receive the Surgeon General's approval the plans must (1) cover all areas of the state; (2) guarantee adequate authority to the state and public health officials; (3) guarantee continued financial support and employment of full time personnel; (4) guarantee adequate distribution and effective use in the extension and expansion of basic public health services; (5) establish and maintain personnel standards on a merit basis, and (6) make such reports as the Surgeon General may require. In general, the federal government will contribute one third of the appropriation required. The Surgeon General, after reasonable notice and opportunity for hearing, may refuse to make further appropriations if he finds that the state fails to comply substantially with any of the provisions already stated. No provision is made for the state to appeal to the courts in defense of its plan, as is provided in the Hospital Construction Act.

S. 2215 (Bridges) provides for research and control relating to diseases of the heart and circulation by aiding in the conduct of researches, investigations, experiments and demonstrations relating to the cause, prevention and methods of diagnosis and treatment of diseases of the heart and circulation. It would establish in the Public Health Service a National Heart Institute, to be administered by the Surgeon General. It would make grants-in-aid to universities, hospitals, laboratories and other public or private agencies, as well as to individuals. It would establish an information center on research. Volunteer patients with heart disease would be admitted to the institute for study and treatment. It provides for the creation of a National Heart Council to consist of the Surgeon General of the Public Health Service, the Chief Medical Officer of the Veterans Administration, the Surgeons General of the Army and Navy and twelve members who shall be leaders in the fields of fundamental sciences, medical sciences, education or public affairs.

Two somewhat similar bills, H. R. 5087 (Keefe) and H. R. 5159 (Smathers), are in the House of Representatives.

Appropriations.—The House of Representatives on March 8 passed an overall total of $173,230,500 appropriation for Public Health Service programs and activities for the fiscal year 1949, which represents $43,673,575 more than corresponding appropriations for 1948.

1. Venereal Disease gets $17,230,000. Most of this money will be distributed among the states through grants-in-aid on a fifty-fifty basis. The amount is slightly less than that allowed for 1948.

2. Tuberculosis has been allowed $9,291,000, which represents an increase of $945,348 over 1948. The increase is allowed for the equipment and operation of eighteen new mass x-ray units for case finding and the conduct of large scale pilot studies of BCG vaccine.

3. Assistance to States, general, totals $13,865,000, which represents an increase of $378,000 over 1948 for comparable activities. Two activities included in the budget estimate were excluded for the time, namely, $4,000,000 for mental hygiene and $1,500,000 to conduct demonstrations in schools on the application of sodium fluoride to the teeth of school children.

4. Communicable Diseases was allowed $7,490,000, which is $429,176 less than the comparable 1948 appropriation. The decrease is accounted for by the assumption on the part of the states of a larger proportion of the cost of malaria and typhus control operations.

5. Hospital Construction had $60,000,000 appropriated for expenditures during the year, and $75,000,000 is allowed for contract authorization. In the deficiency appropriation bill which was passed earlier in the year, an item of $15,000,000 was carried to meet cash requirements for actual construction estimated to be completed by the end of the year. Thus, of the $375,000,000 authorized by the Hospital Construction Act, $150,000,000 will be spent or available for 1949. The government appropriates one third of the actual cost of construction.

6. Administration Expenses and Hospital Construction were allocated $1,352,000, an increase of $424,015 over the corresponding 1948 appropriation for administrative and technical personnel. Forty-six additional positions, largely in the technical categories of architectural engineering and hospital administration, are to be added.

7. Hospitals and Medical Care had $21,443,000 appropriated, a net increase of $71,891 over 1948. The beneficiaries are twenty-one general marine hospitals, two tuberculosis marine hospitals, one leprosarium, seventeen full time outpatient clinics, ninety-eight part time outpatient offices and in addition medical, dental and nursing personnel for coast guard installations and cutters. For foreign quarantine service $3,000,000 is appropriated, representing an increase of $298,141 above the comparable 1948 appropriation.

Employee Health Services Programs received an appropriation of $392,500, which funds are to enable the public health service to supervise the emergency treatment and preventive health programs operated for government employees by the various agencies of the government.

The National Health Institute is allowed $13,570,000, which represents an increase of $2,567,125 over 1948. Of the total budget increase, $1,382,500 is for additional research in diseases of the heart and circulatory system; $7,682,000 is allowed for grants in aid of research, and $400,000 is earmarked for research fellowship grants. A separate item of $100,000 is appropriated for research on peptic ulcer.

The National Cancer Institute is allowed $14,000,000, which is the identical amount available for the current fiscal year.

Salaries and Expenses were allocated a total of $4,047,700, a decrease of $11,738 from the comparable 1948 appropriation.

The Office of International Health Relations is granted $285,000, which is $67,920 below 1948.

President's Communications.—During the life of the Eightieth Congress, the President has submitted to it five health messages recommending the establishment of a national sickness insurance program. It is rumored that he is preparing another. He has also written a letter to the Federal Security Administrator directing him to prepare a ten year health program. The Administrator is preparing to comply with this request and has invited a group of public spirited persons (the original group included only one physician) to assist him in conducting a National Health Assembly May 1-4, 1948. A similar conference was held in 1938.

Health Activities of Washington Groups.—One hundred and twenty-five national organizations are sponsoring a National Conference on Family Life to be held in Washington, D.C., May 6-8, 1948. Delib-

erations will be grouped in the following manner: premarital and early years of marriage; the family with small children; the family with adolescents, and the aging family.

There are other groups in the capital which are functioning with some phase of health as one of their considerations: (1) the National Security Resources Board (not related to any other agency) is organizing a medical division to study the resources of the country. Dr. Paul R. Hawley is advising in the development of the division; (2) the Research and Development Board is organized to study the medical research within the defense forces. It serves as a coordinating body of the armed services and is organizing a medical science committee, which it is hoped will be functioning before summer; (3) the Civil Aeronautics Administration has a medical division which formulates standards for physical examination of applicants for filing licenses.

The Brookings Institution has recently completed a study of health conditions for the Senate Committee on Labor and Public Welfare. A copy of the conclusions and recommendations was distributed with a recent bulletin from the Washington office. The Institution is also collaborating with the Hoover Committee, which is planning a reorganization of the Executive Department of the national government. It is collecting data on health activities.

The Atomic Energy Commission has an active health section.

The Citizens' Advisory Council is an organization set up by the Senate Committee on Finance. The Chairman is Edward R. Stettinius, former Secretary of State. Its function is to study the social security program and make recommendations for its improvement.

Office Activities.—During the year, the Washington office prepared and distributed eighteen regular bulletins and fourteen special bulletins to a mailing list that now surpasses 2,000. The list contains the names of members of the Council on Medical Service, the Board of Trustees and the House of Delegates and names submitted during the year by officers of state medical associations. A few have been added by personal request or at the suggestion of another subscriber. Recently a "multilith" was installed and has proved to be of great convenience in the preparation of the bulletins; they are much improved in appearance and are mailed more promptly. The bulletins are issued with no attempt at regularity, but average about one every ten days. Requests for assistance and advice, both from members of Congress and from government agencies, are increasing materially as are requests from physicians and organizations throughout the country for information not only on legislative matters but on a variety of other aspects of medical legislation and public health.

Respectfully submitted,

JAMES R. McVAY, Chairman.
A. W. ADSON, Vice Chairman.
THOMAS A. McGOLDRICK.
E. J. McCORMICK.
WALTER B. MARTIN.
ELMER HESS.
JESSE D. HAMER.
EDWARD L. BORTZ.
H. H. SHOULDERS.
GEORGE F. LULL.
JOSEPH S. LAWRENCE,
Director, Washington Office.
MR. THOMAS A. HENDRICKS,
Secretary.

RESOLUTIONS SUBMITTED BY CONSTITUENT ASSOCIATIONS

The following resolutions for submission to the House have been sent in by the Executive Secretary of the Missouri State Medical Association:

Resolution on Practice of Medicine for Profit

WHEREAS, There is an ever increasing tendency on the part of hospitals and medical schools throughout the United States to engage in the practice of medicine for profit; and

WHEREAS, This corporate practice of medicine is a professional evil second only in its consequences to socialized medicine; and

WHEREAS, Such practice constitutes not only exploitation of the medical profession but perhaps also of the patient; therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association in convention assembled condemn the practice of medicine for profit by either hospital or medical school; and be it further

Resolved, That our Delegates to the American Medical Association be instructed to present this information to the House of Delegates of the American Medical Association; and be it further

Resolved, That the American Medical Association remove every hospital engaged in the practice of medicine from its list of hospitals approved for internship and residency training; and be it further

Resolved, That the American Medical Association remove any offending medical school from its list of institutions approved for medical teaching.

Resolution on Nonprofit Prepayment Medical Care Plans

WHEREAS, The American Medical Association on many occasions has encouraged the formation of nonprofit voluntary prepayment hospitalization and medical service plans by its constituent state and county societies; and

WHEREAS, These constituent state and county societies have participated in the formation and development of nonprofit voluntary hospitalization programs (nationally known as Blue Cross hospitalization plans) and nonprofit medical surgical service programs (nationally known as Blue Shield plans); and

WHEREAS, The action of the American Medical Association in canceling its contract with the Chicago Blue Cross and Blue Shield plans which provided hospitalization and medical surgical coverage for the employees of the American Medical Association and in contracting with a commercial insurance company for the same coverage was not in the best interest of the medical profession as a whole or the voluntary Blue Cross and Blue Shield plans; and

WHEREAS, This action of the American Medical Association has already by adverse publicity caused serious embarrassment to the Blue Cross and Blue Shield plans; therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct its Board of Trustees to immediately cancel the contract with the commercial insurance company and reinstate the contract with the Blue Cross and Blue Shield plans.

Digitalis.—The foregoing observations, we believe, lend support to the position that the sequence employed in the most common practice of trying digitalis first and then adding a diuretic, if necessary, is in need of revision. In the concept of treatment, the indications are that the order should be reversed; an effective technic for dehydration with salt restriction, free supply of water and a potent diuretic become the base of the system; digitalization becomes an auxiliary or accessory measure, without value in many but of some use in others, and essential in a certain group, especially those with auricular fibrillation. From the standpoint of results, this seems to be a more fruitful approach; there is indication that the incidence of improvement in congestive failure may be much higher from an effective system of dehydration alone than from digitalis alone.—Gold, H., and others: *American Journal of Medicine*, December 1947.

ORGANIZATION SECTION

Council on Medical Service

Rocky Mountain Regional Conference on Medical Service, Denver May 19-20, 1948

The Rocky Mountain Regional Conference is open to physicians from a six state area--Colorado, Kansas, Nebraska, New Mexico, Utah and Wyoming. The conference will be under the direction of James R. McVay, Chairman of the Council on Medical Service. John S. Bouslog, M.D., of Denver, president of the Colorado State Medical Society, will open the conference with an address of welcome.

Cooperating with the Council on Medical Service are the Council on Industrial Health and the Committee on Rural Medical Service. The two day program will include a general session on medical organizational problems and sessions of rural health, industrial health problems, prepayment medical care plans and rehabilitation.

Key speakers for the conference are: Dr. A.C. Sudan, of Denver, the Association's General Practice Medalist for 1947, speaking on "The General Practitioner"; Mr. Jack Foster, editor of the *Rocky Mountain News* (Denver), "The Modern Newspaper Looks at the Modern Doctor," and Dr. Harold C. Lueth, dean of the University of Nebraska School of Medicine, "Medicine in the next Emergency."

The Rural Health session will feature a panel discussion on the past and future of state rural health programs, with special emphasis on the responsibility of local communities in the planning and development of such programs. Dr. Fred A. Humphrey of Fort Collins, Colo., member of the Committee on Rural Medical Service of the American Medical Association, will preside.

Industrial health problems in the Rocky Mountain area will be highlighted at the morning session, May 20. Dr. George H. Phelps of Cheyenne, Wyo., will preside. The six presentations by outstanding speakers will underscore the principal directions in which organized community effort is necessary if the objectives of industrial health are to be realized. It will also be pointed out that the highest type of medical leadership and diplomacy is needed to assure that the essential interests of the worker, employer and physician are properly understood and safeguarded.

A rehabilitation round table is scheduled for the second afternoon and will be moderated by Dr. Atha Thomas of Denver. Community needs and facilities for rehabilitation of the physically handicapped will be reviewed. Physicians, industrialists and community leaders are expected to be in attendance. A demonstration of new devices and proper fitting of artificial limbs will be featured by Dr. Thomas and Mr. Chester Haddan, also of Denver.

Dr. A.J. Offerman, president of Nebraska Medical service, will open the discussion of prepayment medical care plans, to be participated in by representatives of plans in the six states.

Washington Letter

(From a Special Correspondent)

May 5, 1948.

Opposes Induction of Officers Over Draft Age

The American Medical Association asked Congress, in testimony presented to the House Armed Services Committee by Dr. James C. Sargent, to prevent a disproportionate number of physicians being inducted in the armed forces in the event of war. The legislators were requested not to act on provisions in the draft bill calling for induction of physicians beyond the 19 through 25 draft age group. Under the measure, doctors, dentists and veterinaries would be eligible for a two year draft through age 44.

National Health Assembly

Dr. Edward L. Bortz, President of the American Medical Association, was on the panel of speakers at the four day National Health Assembly which convened in the Capitol. Others were Dr. Morris Fishbein, Editor of THE JOURNAL; Dr. E. Brock Chisholm, executive secretary of the Interim Commission for the World Health Organization; Dr. V. A. Getting, president of the Association of State and Territorial Health Officers, and Dr. Leonard A. Scheele, Surgeon General, U. S. Public Health Service. Federal Security Administrator Oscar R. Ewing, who called the assembly to obtain suggestions for the ten year national health program proposed by President Truman, said he hoped the conference would result in more intensive community attacks on health problems and that it would create greater harmony between diverse medical groups.

Cancer Institute Opens Study of Occupational Cancer

Dr. W. C. Hueper of New York, cancer pathologist, will direct the occupational cancer laboratory at Georgetown University Medical School, which is part of a new program of the National Cancer Institute. A new section will conduct research on occupational cancer hazards and try to determine what they are and how they can be prevented.

St. Elizabeths Hospital Lauded in Report

The mental hygiene division of the Federal Security Agency reports that St. Elizabeths (mental) Hospital in the nation's capital is not only the least crowded institution of its kind in the country but spends nearly twice as much time as any state mental hospital for the care of its patients. The report also stated that the hospital has 2.6 patients per employee while in many state institutions there are as many as 9 patients for each worker. Expense per patient is reported at $1,058 annually compared with a per capita expense of $2,300 in most Southern states. In addition, while overcrowding has increased elsewhere, St. Elizabeths is said to be the only one of eight hospitals with room for more patients. Recently a House subcommittee reported to the full Education and Labor Committee an amended bill to authorize

St. Elizabeths to admit and treat patients on voluntary applications, a plan long sought by Dr. Winfred Overholser, the superintendent.

Admission of Displaced Doctors, Dentists and Medical Nurses Sought

A House Judiciary Committee broke a long deadlock and sent to the House for action the bill to permit 200,000 displaced Europeans to come to the United States. Included would be doctors, dentists, nurses and persons with scientific, educational and technologic qualifications. The bill would permit entry of this number of persons over two years and charge them to future immigration quotas of their native countries. President Truman had advocated admitting 400,000 in four years.

Booklet for Veterans Who Have Tuberculosis

The Veterans Administration is sending a booklet to the 13,369 tuberculous patients in veterans' hospitals. Dr. John B. Barnwell, chief of the Veterans Tuberculosis Service, said that the disease kills almost 200 patients a month in the agency hospitals, and he claimed that this figure can be cut sharply. Patients must be instructed in proper care and diet, must not become despondent over the long recovery period necessary for a cure, must not be guilty of self neglect and must have their morale raised. To get rid of tuberculosis, he said, means rest, proper care in a hospital, not at home, and proper food.

Medical Legislation

STATE LEGISLATION

Kentucky

Bills Enacted.—S. 135 was approved March 25. It provides for the creation of a board of examiners for the certification of clinical psychologists. S. 199 was approved March 29. It creates a state tuberculosis sanatorium commission to have charge of the government and operation of all of the state tuberculosis sanatoria and to employ and fix the compensation of the medical director of each sanatorium. Such medical director must be a member in good standing of the Kentucky State Medical Association or the National Tuberculosis Society and must have had at least five years' clinical experience in the field of tuberculosis.

Massachusetts

Bill Introduced.—H. 2139 has been introduced as a substitute for a number of pending proposals relating to antivivisection. This proposal would provide for an investigation and study by an unpaid special commission relative to the procurement and treatment of animals for medical experimentation and study.

Bill Enacted.—H. 934 was adopted Feb. 19, 1948. It enacts a resolution to the Congress of the United States memorializing Congress to enact legislation providing for the establishment of a National Science Foundation with the appropriation of sufficient funds to encourage scientific research to be conducted which shall be made available to the directors of the armed forces and insure national security in the future.

Mississippi

Bills Enacted.—H. 818, approved April 9, provides for an appropriation to the Mississippi commission on hospital care for the purpose of building, erecting and equipping hospitals and other facilities within the state of Mississippi. H. 1000, approved April 9, provides for an appropriation to the Mississippi commission on hospital care for the purpose of building, erecting and equipping and contributing to the building, erecting and equipping of hospitals within the state. H. 1047, approved April 9, provides for an appropriation for assistance in carrying out a program of coordinated school, health and nutrition services throughout the state, in cooperation with the international health division of the Rockefeller Foundation and the general education board. S. 229, approved April 10, prohibits the operation of any store alleged to be a drug store or pharmacy unless the owner or operator be, or shall have in his regular employ therein, a registered pharmacist or a licensed physician on duty. S. 450, approved April 10, provides for the appointment of the State Board of Dental Examiners by the Governor from a list to be submitted by the Mississippi Dental Association. S. 453, approved April 14, enacts an enabling act for the organization and operation of nonprofit hospital, medical and surgical service corporations.

New Jersey

Bill Introduced.—A. 467 proposes the creation of a board of chiropractic examiners to regulate and license practitioners of that art. Chiropractic is defined as the theory and practice of nerve impulse control by vertebral adjustment by hand only, for the purpose of removing a cause of disease. The proposal would authorize licentiates to use the Neurocalometer, x-ray and other instruments necessary, solely for the purpose of diagnosis or analysis.

Bill Enacted.—A. 105, which has become chapter 34 of the Laws of 1948, proposes to require persons desiring to practice dental hygiene to first obtain a license permitting such practice from the State Board of Registration and Examination in Dentistry.

Rhode Island

Bill Introduced.—H. 966 proposes certain amendments to the hospital licensing law, among which is the definition of a hospital as "an institution for the lodging, care and treatment of persons suffering from disease or other abnormal physical or mental conditions." The proposal would exempt convalescent homes from its operations and would also provide that no person shall obtain medical or surgical treatment under false representations as to his financial condition from any hospital or outpatient department or dispensary licensed by the hospital licensing law.

Bill Enacted.—H. 572, approved April 27, amends the law relating to professional nursing by adding a few sections to such law which regulate the practice of practical nursing. The term practical nurse is not defined by the law.

South Carolina

Bill Introduced.—H. 1652 proposes, among other things, that the Medical College of South Carolina may participate in federal funds that may be available to assist it in financing the construction and equipment of a teaching hospital.

Bills Enacted.—H. 1222, which has become Governor's Act 1116 of the Acts of 1948, provides for the establishment of eight scholarships at the Medical College of the State of South Carolina of the value of $75 per month plus tuition, conditioned on the recipient doing private general medical practice during one calendar year for each year of the scholarship in some rural community in the state designated by the state board of health. H. 1413, adopted April 10, directs the Board of Naturopathic Examiners of the State of South Carolina to immediately undertake a study of the various licenses and personal qualifications of applicants heretofore licensed to practice naturopathy in the state and the propriety of canceling any licenses erroneously obtained. The Board is further directed to immediately cancel any licenses of licensees to practice naturopathy, if said Board in its discretion decides that said license should be canceled for any reason; and in checking the qualifications of the licensees the Board shall take into consideration the information developed by the Law Enforcement Division of the State of South Carolina and such other information as said Law Enforcement Division may be able to obtain with reference thereto. The board of Naturopathic Examiners is directed to submit to the General Assembly of South Carolina on its opening day in January 1949 a full and complete written report concerning the matter. H. 1803, adopted April 10, establishes, by resolution, a special committee for the purpose of studying and making an investigation into the need and feasibility of establishing an institution, either separately or in connection with any existing state institution, for the purpose of treating chronic alcoholic addicts. S. 722, which has become Governor's Act 1193 of the Acts of 1948, authorizes any department, commission, board or officer of the state to have microfilms made of any part of its records and provides that such microphotographs or microphotostatic copies of such records may be introduced in evidence in any court of law in the state to the same extent as the original records would have been.

GOVERNMENT SERVICES

ARMY

DR. BLAKE APPOINTED CHAIRMAN OF NEW COMMITTEE

Dr. Vannevar Bush, chairman, research and development board of the national military establishment, announces the appointment of Dr. Francis G. Blake, Sterling Professor of Medicine at Yale University, as chairman of the newly formed Committee on Medical Science.

The Committee on Medical Science of the Research and Development Board will be concerned with the survey, analysis and evaluation of all aspects of research and development activities in the field of medical and allied sciences, within the Military Establishment. As far as research and development activities are concerned, the Research and Development Board Committee on Medical Science will work closely with the Hawley Committee, appointed by the Secretary of Defense to review all activity in the military establishment related to medicine and allied sciences. Dr. Blake is well known for his investigations on pneumonia, penicillin therapy and epidemic disease. He is also consultant to the Surgeon General of the Army and of the Army Epidemiological Board, and a member of the National Research Council Committees on Medicine and Chemotherapy. In addition to the chairman, the Research and Development Board Committee on Medical Science will be composed of two civilian members selected from the field of medical science and not more than two members each appointed from the Departments of the Army, Navy and Air Force.

THE JOHN SHAW BILLINGS EXHIBIT

The fifth exhibit in the series " Famous Men of Army Medicine" memorializes Col. John Shaw Billings, under whose leadership for the thirty years ending in 1895 the Army Medical Library grew from a small beginning to more than 300,000 volumes and pamphlets and more than 4,000 portraits of physicians. Dr. Billings also developed the Index Catalogue of the Library of the Surgeon General's Office and planned Johns Hopkins Hospital. He saw four years of active service in camps and hospitals during the Civil War, performing many major operations after the Battles of Chancellorsville and Gettysburg. He is said to have been the first surgeon in the war to successfully excise the ankle joint; this procedure had been done only two or three times previously in the history of surgery. Numerous honorary degrees and memberships were conferred on Dr. Billings, and during World War II an Army General Hospital in Indiana was named in his honor. In commemorating the thirty-fifth anniversary of his death the Specimen Fasciculus, issued by him in Washington, D.C., in 1876 as the prospectus of the great Index-Catalogue, was on exhibit in the Library of Congress March 6-12.

COURSE IN NUCLEAR PHYSICS

The total attendance at the five day course on the medical aspects of nuclear energy given at the Army research and graduate school, Washington, D. C., was five hundred and thirty-eight as of February 6, including twenty-seven persons from various medical schools throughout the country and four from the Royal Army Medical Corps; others taking the course were from the armed services, Public Health Service, Veterans Administration and the Atomic Energy Commission.

INSTITUTE OF PATHOLOGY

Lieut. Col. Carl F. Tessmer, MC, of the staff of the Institute of Pathology, left February 28 for an extended tour of duty with the National Research Council, Tokyo, Japan.

Col. J. E. Ash, retired, scientific director of the American Registry of Pathology, spoke in March at the Tulane University of Louisiana School of Medicine, New Orleans, on the pathology of rickettsial diseases, and before the New Orleans Parish Medical Society on the reticuloendothelium in infections.

Col. Kenneth F. Ernst, chief of laboratory services, Letterman General Hospital, San Francisco, is now on a three months' research and and study project at the Institute of Pathology.

HOW TO REMAIN AT NORMAL WEIGHT

Dr. Louis H. Newburgh, professor of clinical investigation, University of Michigan Medical School, Ann Arbor, in a lecture before Army Medical officers at the Army Medical Center, Washington, D.C., in March concluded that there is only one way to get fat and that is by overeating. It was long supposed, he said, that certain conditions of obesity—Cushing's syndrome—resulted from too little secretion of one of the hormones from the pituitary gland. Dr. Newburgh said that anterior pituitary deficiency does cause a condition which can be mistaken for obesity, especially in women, but there is no notable increase of weight: The abdominal walls are weakened so that the internal organs tend to bulge outward, but there is actually no more fat than before. Another hypothesis which seemed valid for a time was that some states of obesity were due to injuries of the hypothalamus. Animal experiments have not shown any influence of the hypothalamus on the deposition of fat. The hypothalamus in some human beings is affected by encephalitis, and some of these victims become obese. While this has been taken to prove the hypothalamic hypothesis, the facts are, he said, that in the majority there is no change of weight and statistical studies give no validity to the assumption. Dr. Newburgh discussed other theories on the cause of obesity before making the conclusion that overeating is the only way to get fat. He also said that a low caloric diet is more important than exercise as a weight-reducing measure, and that it is necessary to walk 36 miles (58 kilometers) to rid the body of 1 pound (0.5 Kg.) of weight. He warned against giving thyroid and other preparations except in exceptional circumstances; they seldom do any good for a protracted period, and they confirm the patient in his belief that his fatness is due to a cause beyond his control; consequently he eats as much and remains as lazy as before.

NAVY

RESEARCH ON RESPIRATORY DISEASES

With the transfer of the Naval Medical Research Unit 4 from Dublin, Ga., to Great Lakes, Ill., the unit will emphasize research on respiratory diseases, in preparation for any contingency which may arise from reenactment of selective service or from universal military training. The Navy maintains a similar research unit on the West coast for control of respiratory infections, and one in Cairo, Egypt, for the study of tropical diseases. Arrangements are being made for a three man team from the Department of Agriculture to join the research unit at Cairo to collaborate on the control of disease-conveying insects. This is the second time that scientists of the Department of Agriculture have been sent to the unit in Cairo, the first instance being for the control of flies and mosquitoes. This group from the Department of Agriculture became famous in developing effective control of typhus by the control of lice with DDT.

HUMAN ENGINEERING

The Bureau of Medicine and Surgery is preparing an exhibit for the annual convention of the Aero-Medical Association in Toronto, Canada, June 15-18. The exhibit, "Human Engineering," will show the advances in naval aviation medicine in adapting pilots to flight and in designing equipment to increase human tolerance to altitude and acceleration. The problems of supersonic speed of aircraft have been foreseen by the Navy research personnel, and this exhibit will demonstrate the accomplishments and aims of this branch of research.

COURSES OF INSTRUCTION

The following Naval Medical Officers, having completed courses of instruction as indicated, have been assigned to duty: Comdr. John R. Cavanagh, from residency training in psychiatry at the Public Health Service Hospital, Fort Worth, Texas, to duty at Portsmouth, N.H.; Lieut. Alfred B. Mason, from training in tropical medicine at Naval Medical School, Bethesda, Md., to Camp Lejeune, N.C.; Lieut. Moses E. Rice Jr., from residency training in general surgery at the Naval Hospital, Philadelphia, to the Naval Hospital, Key West, Fla.; Lieut (jg) Elbert C. Brining Jr., U.S.N.R., from basic refresher course, Naval Medical School, Bethesda, Md., to Marine Corps District Headquarters, Recruiting Station, Newark, N.J.; Lieut. (jg) Donald W. Drew, U.S.N.R., from basic refresher course, Naval Medical School, Bethesda, Md., to Naval Base, Long Beach, Calif.

PERSONAL

Capt. Robert L. Ware (M C) will be a delegate to the sixth Decennial Conference for Revising the International List of Causes of Death in Paris, France, April 26-30. The session will be under the auspices of the Interim Commission of the World Health Organization. The conference this year will consider including causes of sickness and injury as well as causes of death.

Lieutenant (jg) Lowell K. Cunningham (MC), of San Diego, Calif., has been appointed to the permanent grade of lieutenant (jg) on completion of an internship at the Naval Hospital, San Diego.

Lieut. Walter H. Jarvis Jr., Grand Saline, Texas, a former officer of the regular Navy, has accepted a commission in the Medical Corps Reserve and has been ordered to duty at the Naval Hospital, Houston, Texas.

Rear Admiral Joel T. Boone was awarded the honorary degree of doctor of laws by Hahnemann Medical College, Philadelphia, March 18, on which occassion he delivered the commencement address. Dr. Boone is a graduate of Hahnemann Medical College.

NAVY OFFICERS APPROVED FOR GRADUATE TRAINING

The Advisory Board of the Bureau of Medicine and Surgery has approved the following officers for graduate training:

Capt. Martin V. Brown, instruction in dermatology and syphilology, Northwestern University, Chicago.
Capt. Gordon H. Ehblad, instruction in dermatology and syphilology, Northwestern University.
Comdr. John L. Flannery, course in pediatrics, University of Pennsylvania Graduate School of Medicine.
Comdr. George J. Kobut, additional training in obstetrics and gynecology, Naval Hospital, Portsmouth, Va.
Comdr. Ernest F. Norwood, residency in surgery, Naval Hospital, St. Albans, N. Y.
Comdr. Ray H. Powell, residency in ophthalmology, Naval Hospital, Oakland, Calif.
Comdr. John D. Walters, course in dermatology and syphilology, University of Pennsylvania Graduate School of Medicine.
Comdr. Karl V. Keese, instruction in dermatology and syphilology, Northwestern University.
Comdr. William N. Mew, instruction in dermatology and syphilology, Northwestern University.
Comdr. Arthur L. Schultz, additional training in neurosurgery, Naval Hospital, Long Beach, Calif.
Comdr. William O. Umiker, residency in pathology, Naval Medical School, Bethesda, Md.
Comdr. Harry James Alvis, preventive medicine, Harvard University School of Hygiene and Public Health, Boston.
Comdr. Sylvester F. Williams, fellowship in radiology, University of Chicago.
Lieut. Comdr. Willian C. Cantrell, children's orthopedics, State University of Iowa.
Lieut. Comdr. Jacob J. Robbins, residency in internal medicine, Naval Hospital, Chelsea, Mass.
Lieut. Comdr. Henry S. Caley, course in neurology, New York Neurological Institute.
Lieut. Comdr. Charles H. Gilliland, residency in obstetrics and gynecology, Naval Hospital, Bethesda, Md.
Lieut. Comdr. Wilson J. Huston, residency in obstetrics and gynecology, Naval Hospital, Bethesda, Md.
Lieut. Comdr. J. D. Langston, fellowship in pathology, Mayo Clinic, Rochester, Minn.
Lieut. Comdr. Caesar P. Orofino, residency in orthopedic surgery, Naval Hospital, St. Albans, N. Y.
Lieut. Robert E. Seitzer, residency in psychiatry, Colorado Psychopathic Hospital, Denver.
Lieut. Frank A. Carnevino, course in pediatric and obstetric anesthesia, the Montreal Children's Hospital and the Maternity Pavilion of the Royal Victoria Hospital, Montreal, Canada.
Lieut John W. Rocco, aviation medicine, Naval Air Station, Pensacola, Fla.
Lieut. Thomas E. Athinson Jr., residency in ophthalmology, Naval Hospital, Bethesda, Md.
Lieut. (jg) Carleton J. Brown, residency in pediatrics, Naval Hospital, Chelsea, Mass.
Lieut. (jg) Tom C. Hardy, fellowship in anesthesiology in a civilian institution.
Lieut. (jg) Raleigh M. Hood, residency in surgery, Naval Hospital, San Diego, Calif.
Lieut. (jg) Theodore H. Wilson Jr., residency in surgery, Naval Hospital, Chelsea, Mass.
Lieut. (jg) John G. Zaccain, residency in internal medicine, Naval Hospital.
Lieut. (jg) Robert W. Sharp, residency in internal medicine, Naval Hospital, San Diego, Calif.
Lieut. (jg) James C. Marr, residency in children's orthopedics, St. Charles Hospital, Brooklyn.
Lieut. (jg) William Mayer, fellowship in psychiatry, Langley Porter Clinic, San Francisco.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest; such as rebate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

First Q Fever in San Francisco.—Dr. Jacob C. Geiger, director of public health, City and County of San Francisco, on April 20 reported a case of Q fever in a man, a resident of California for three years. Presumably this is the first case reported in San Francisco. The patient was admitted to the San Francisco Hospital, Stanford Medical Service, March 11 and was discharged April 2. He had been in the northern part of California about ten days prior to the onset of his illness.

CONNECTICUT

Alcohol Studies.—The Summer School of Alcohol Studies conducted by the Laboratory of Applied Physiology of Yale University will hold its sixth annual session from July 9 to August 6. The 1948 course provides a special curriculum for physicians and others professionally concerned with the treatment and care of alcoholic persons and will include work at the Yale Plan Clinic in New Haven. The school is under the directorship of E. M. Jellinek, Sc.D. The lecturers, although mainly from the faculty of Yale University, include representatives of other institutions of education, research, treatment or rehabilitation. A prospectus may be obtained from the Executive Secretary, Summer School of Alcohol Studies, Yale University, 52 Hillhouse Avenue, New Haven, Conn.

ILLINOIS

Rabies in Illinois.—The State Department of Public Health reports that rabies is widespread among dogs in northern sections of Illinois. There is also danger of the disease's becoming prevalent among foxes, one infected animal having been found in Whiteside County. This fox had bitten a farm worker and had attacked a herd of dairy cattle on the same farm before it was killed. Last year more than 3,600 persons in Illinois were given the Pasteur treatment for the prevention of the disease. The *Chicago Tribune* of April 22 reported that 5 men had been bitten by a rabid dog in the vicinity of 51st Street and Woodlawn Avenue, Chicago. Orland Township was placed under rabies quarantine April 21; other townships in Cook County were placed under quarantine earlier this year (THE JOURNAL, February 28, p. 634).

Chicago

Personal.—Dr. Italo Frederick Volini has been honored with a membership in the Medical Society of Bologna, Italy, as of February 20.

University Receives Largest Cancer Grant.—The University of Chicago has received a check for $190,000 from the American Cancer Society, Inc., for use in cancer research. This is the largest such grant ever made by the American Cancer Society, Inc., according to *Illinois Cancer News*, April 1948.

Beds Available at Sanitarium.—La Rabida Jackson Park Sanitarium, on the lake front in Jackson Park, is now prepared to admit a number of acutely ill patients suffering from rheumatic fever or rheumatic heart disease. La Rabida is a charitable, nonprofit, nonsectarian institution admitting Illinois patients aged 4 to 12 years, inclusive, regardless of race, color or creed. Physicians who desire admission for their patients should contact the medical director or the director of social service. While the patient is in residence the referring physician is invited to attend grand rounds on Wednesday from 3 to 5 p.m. A complete report of medical progress will be submitted to the referring physician on the discharge of his patient.

IOWA

Dr. Bean Appointed Head of Internal Medicine.—Dr. Willian B. Bean, associate professor of medicine at the University of Cincinnati College of Medicine, has been appointed to succeed the late Dr. Fred M. Smith, head of the Department of Internal Medicine in the State University of Iowa College of Medicine City, Iowa. Dr. Bean received his medical degree at the University of Virginia, Charlottesville, in 1935. He went to Cincinnati as a senior medical resident at Cincinnati General Hospital in 1938. After two years as assistant visiting physician at Hillman Hospital, Birmingham, Ala., he returned to Cincinnati in 1942 as assistant professor of medicine at the University of Cincinnati College of Medicine, where in 1946 he was appointed associate professor.

KANSAS

Annual Meeting of State Medical Society.—The Kansas State Medical Society will meet in annual session May 10-13 at the Arcadia Theater, Wichita. Out of state speakers include:

A. Carlton Ernstene, Cleveland, Hypertension.
Arild E. Hansen, Galveston, Texas, The Child with Rheumatic Fever.
Waltman Walters, Rochester, Minn., Malignant Lesions of the Stomach.
Edward B. Tuohy, Washington, D.C., Choice of Anesthetic Agents and Procedures.
Baldwin L. Keyes, Philadelphia, Management of Neuroses.
Henry M. Winans, Dallas, Texas, The Physical Examination.
Willis E. Brown, Iowa City, Iowa, Management of Abortion.
Richard K. Gilchrist, Chicago, Prognosis in Carcinoma of Rectum.
Edward H. Nyquarson, Rochester, Minn., Hyperparathyroidism and Hypoparathyroidism.

Round Table Luncheons will be held. Technical exhibits and scientific movies will also be shown. The annual banquet will be held on the Roof Garden, Broadview Hotel, at 7 p.m. Wednesday. The Woman's Auxiliary to the state society will meet in conjunction with the state society.

MASSACHUSETTS

Society News.—At the annual meeting of the Norfolk District Medical Society at the Hotel Kenmore, Boston, May 12, at 5:15 p.m. Karl T. Compton, Sc.D. president, Massachusetts Institute of Technology, Cambridge, will speak on "Lessons from the Story of the Atomic Bomb," following the dinner at 7 o'clock.

Dr. Moore Named Mosley Professor of Surgery.—Dr. Francis D. Moore, Brookline, has been appointed surgeon in chief of the Peter Bent Brigham Hospital and Mosely professor of surgery at the Harvard Medical School, Boston, where he is now assistant professor of surgery. He is also assistant surgeon at the Massachusetts General Hospital, consulting surgeon at the Massachusetts Eye and Ear Infirmary and member of the associate staff of Palmer Memorial Hospital. He succeeds the late Dr. Elliott C. Cutler. Dr. Moore is a graduate of Harvard Medical School, 1939. He joined the Harvard medical teaching staff in 1941 and became assistant professor of surgery in 1947.

MICHIGAN

Personal.—Dr. John N. Weller, Ann Arbor, has been awarded the first Alfred Stengel Research Fellowship by the American College of Physicians. He will undertake studies on the ionic patterns of intracellular fluids and their influence on enzymatic reactions.

Dr. Stapleton Made Emeritus Professor.—After forty-five years of association with Wayne University, Dr. William J. Stapleton Jr., former associate dean of the Wayne University College of Medicine, Detroit, has been appointed "Emeritus Professor of jurisprudence, ethics and economics" by the Detroit Board of Education. Dr. Stapleton was a member of the permanent staff of the college from 1914 until he retired in July 1947.

MISSISSIPPI

Annual Meeting of State Medical Association.—The Mississippi State Medical Association will hold its annual meeting May 11-13 at the Robert E. Lee Hotel, Jackson, under the presidency of Dr. Paul G. Gamble, Greenville. The Ewing Fox Howard Oration will be given by Dr. Everett D. Sugarbaker, Jefferson City, Mo., on "Cancer of the Breast" at the Tuesday evening session. The out of state speakers will be:

James G. Hughes, Memphis, Tenn., Care of the Premature Infant.
Dean F. Smiley, American Medical Association, Chicago, Responsibilities of the Private Physician in the School Health Program.
James V. Lowry, U.S. Public Health Service, Bethesda, Md., Mental Hygiene Program at a State and Local Level.
George E. Shambaugh Jr., Chicago, Treatment of the Deaf and Hard of Hearing Patient.
Shelley R. Gaines, New Orleans, Diagnosis of Common Motor Anomalies.
William B. Clark, New Orleans, Management of Common Motor Anomalies.
Winchell McK. Craig, Rochester, Minn., Operation on the Sympathetic Nervous System for Relief of Hypertension.
E. W. Alton Ochsner and Michael E. DeBakey, New Orleans, Bronchogenic Carcinoma.
C. Thorpe Roy, New Orleans, Management of Congestive Heart Failure; the Role of Diuretics.
Edward S. Miller, Atlanta, Ga., Pathogenesis, Diagnosis and Treatment of the Acute Phase of Poliomyelitis.

The annual banquet will be at the Heidelberg Hotel Wednesday at 7:30 p.m. The Woman's Auxiliary of the state medical association will meet May 11-12 at the Robert E. Lee Hotel.

NEW YORK

Emergency Medical Care.—On April 1 the Medical Society of the County of Monroe instituted a twenty-four telephone service to meet the demands of the public for emergency medical care. Physicians are provided from volunteer groups in each of the four sections of the city.

Society Presents Past President's Keys.—The Medical Society of the County of Erie, at a meeting in the Hotel Statler, Buffalo, February 24, presented Past President's Keys to the nineteen living past presidents of the society. Hereafter a Past President's Key will be presented to the retiring president at the annual meeting in December as a token of appreciation of his service to organized medicine in Erie County.

Bequest to University of Rochester.—A sum of about $1,500,000 was bequeathed to the University of Rochester for research in the medical sciences by the will of Ernest L. Woodward, LeRoy. The bequest will be used to strengthen the school's work in training and research in human health and welfare. Last year Mr. and Mrs. Woodward gave the university a $500,000 estate in LeRoy to be used by the school of medicine and dentistry as a model center for research, diagnosis and treatment of cerebral palsy and infantile paralysis (THE JOURNAL, Jan. 25, 1947, p. 256). The center has been in operation since last October.

New York City

Schick Lecture.—The Bela Schick Lecture will be delivered by Michael Heidelberger, Ph.D., professor of biochemistry, Columbia University College of Physicians and Surgeons, in Mount Sinai Hospital May 11 at 8:30 p.m. on "Immunity as Indicated by the Formation of Antibodies."

Dr. Friedman Goes to Cleveland.—Dr. Sigmund L. Friedman, director of Sydenham Hospital, resigned effective March 15 to accept an appointment to a similar post at Mount Sinai Hospital, Cleveland. Dr. Friedman has been director of Sydenham Hospital since February 1947.

Appoint President of Mount Sinai Hospital.—Alfred L. Rose, vice president of Mount Sinai Hospital since 1945, was recently elected president to succeed George B. Bernheim, who retired from the office and was elected president emeritus, the second to be chosen for that office in the hospital's ninety-six year history. Dr. Rose has been president of the Mount Sinai Hospital School of Nursing since 1943.

Society News.—At the conference of the New York Institute of Clinical Oral Pathology, Inc., May 17, 9 p.m., at the New York Academy of Medicine Dr. Joseph L. Goldman will speak on "The Relationship of the Maxillary Antrum to Oral Surgical Problems."—The New York Dermatological Society meeting February 24 was held in honor of Dr. Howard Fox, professor emeritus of New York University College of Medicine since 1938.

Measles Epidemic.—The New York City Health Department reported April 8 that there were 6,840 cases of measles during March and 11,908 cases and 9 deaths for the first three months of 1948. In the present epidemic less than 1 child in every thousand dies of the disease. In contrast, in the 1922 epidemic there were 40,569 cases and 977 deaths, which meant that 24 of every thousand children with the disease died.

Rehabilitation Symposium.—A rehabilitation symposium has been arranged by the Medical Society of the State of New York in cooperation with the New York State Department of Health for the Nassau County Health Department and the Nassau County Medical Society at Cathedral House, Garden City, Long Island, May 25 from 2 to 5 p.m. Dr. Francis J. Carr, New York, will speak on "Rehabilitation of the Poliomyelitis Patient," and Dr. George G. Deaver, New York, on "What Can Be Done for Cerebral Palsy."

Lecture by Sir Henry Dale.—Under a grant from the Samuel H. Kress Foundation, Sir Henry H. Dale, London, past-president of the Royal Society of England, gave the first lecture on "Chemical Transmission of Nervous Effects" April 20 at the New York University College of Medicine. The lecture was under the joint sponsorship of the New York University-Bellevue Medical Center and Postgraduate Medical School, to which the foundation last month made a grant of $162,000 to be utilized in the integration and expansion of postgraduate training programs.

NORTH CAROLINA

Narcotic Violation.—The Bureau of Narcotics, Washington, D. C., reports that Dr. James M. Northington, Charlotte, pleaded guilty to an indictment charging violation of the federal narcotic law in the United States District Court at Shelby, February 27. He was placed on probation for three years and fined $500.

Course in Medical Mycology.—A month's course in medical mycology, under the direction of Norman F. Conant, Ph.D., is to be offered at the Duke University School of Medicine and Duke Hospital, Durham, June 28 to July 30. Emphasis will be on the practical aspects of the laboratory as an aid in establishing a diagnosis of fungous infection. Work with patients, cultures and laboratory animals will serve as a basis for this course. Applications will be considered in the order in which they are received, but an attempt will be made to select students on the basis of previous training and stated need for this work. A fee of $50 will be charged. Direct inquiries to Dr. Norman F. Conant, Duke University School of Medicine, Durham, N.C.

OKLAHOMA

Tumor Clinic Opens.—The St. John's Tumor Clinic, newly organized diagnostic and cancer treatment center at St. John's Hospital, Tulsa, was formally opened March 2. Although primarily designed for the care of indigent cancer patients, the clinic will be open to the general public under certain circumstances. The project is financed by the Oklahoma Division of the American Cancer Society, together with funds appropriated by Congress and administered through the Oklahoma State Department of Public Health. An executive committee of six Tulsa physicians is in charge of direction of the clinic. For the present the clinic will be in operation on Tuesday mornings only. All patients must be referred by a physician, and indigent patients will be cleared through the Tulsa County Medical Clinic. The clinic has been approved by the board of trustees of the Tulsa County Medical Society.

PENNSYLVANIA

Councilor District Meeting.—The Seventh Councilor District meeting and the Graduate Education Institute and banquet will take place May 13 in Williamsport, beginning at 9 a.m. One hour discussions, with question and answer periods on cardiovascular diseases make up the daytime program. At the dinner at 6:30 p.m. presentation of "fifty year" testimonials will be made to Dr. Saylor J. McGhee, Lock Haven, and Dr. William H. Rote, Williamsport.

Philadelphia

Personal.—Dr. Edward L. Bortz, president of the American Medical Association, was awarded the honorary degree of doctor of law March 18 at the commencement of Hahnemann Medical College and Hospital at Philadelphia.

Dr. Macfarlane Honored.—A dinner in honor of Dr. Catharine Macfarlane was given at the Warwick Hotel, April 7, sponsored by the Woman's Medical College of Pennsylvania. The date marked Dr. Macfarlane's fifty years in medicine. Three hundred guests attended. President Louise Pearce, M.D., gave the welcome and Dean Marion Fay, Ph.D., introduced the guests. Dr. Edward L. Bortz, Philadelphia, President of the American Medical Association, and Judge Dorothy Kenyon, New York, the government's representative to the United Nations on the legal status of women, were the guest speakers.

Disaster Committees Appointed.—The recently formed Atomic Energy Medical Steering Committee is setting up a program to protect the public in event of disaster. Societies represented on the committee are the county medical society, Hospital Council, 348th General Hospital Reserve and the American Red Cross. Dr. F. William Sunderman, chairman, Disaster Preparedness Committee, Philadelphia County Medical Society, has appointed six subcommittees: (1) instrumentation, to determine the existence and intensity of radioactive substances; (2) treatment of casualties, including the availability of blood and blood substitutes; (3) psychiatric, to be concerned with strengthening public morale; (4) emergency administration, to give attention to the movement of large masses of the population to safe areas; (5) epidemiology, to consider public health problems, and (6) public relations, to keep the public informed on procedure to follow in an emergency. The subcommittees made a study of each problem assigned and reported to the general committee in April.

Pittsburgh

Mellon Lecture.—Dr. Eugene F. Dubois, professor of physiology and biophysics at Cornell University Medical College, New York, will deliver the thirty-first Mellon Lecture on May 27, on "Why Are Fever Temperatures over 106 F.?" The Mellon Lectures are sustained by the heirs of the late R.B. Mellon and are sponsored by the Society for Biological Research of the University of Pittsburgh School of Medicine.

Annual Meeting of County Society.—The annual meeting of the Allegheny County Medical Society will be held May 25. A symposium in the afternoon will be devoted to the diagnosis and treatment of cancer. Speakers include:

Eugene P. Pendergrass, Philadelphia, Prevention of Cancer of the Breast.

Alexander Brunschwig, New York, Surgical Trends in the Treatment of Cancer.

Roscoe R. Spencer, U.S. Public Health Service, Bethesda, Md., Trends in Cancer Research, with Special Emphasis on the Role of Cellular Survival and Adaptation.

TENNESSEE

Radioisotopes Training Courses.—A series of three one-month training courses conducted by the Oak Ridge Institute of Nuclear Studies will be held at Oak Ridge this summer in the technic of using radioisotopes. The courses will be held June 28 to July 23, August 2 to 27 and August 20 to September 24. Application forms and additional information may be obtained from Dr. Ralph T. Overman, acting head of the institute's Department of Special Training, Box 117, Oak Ridge, Tenn. The courses will not attempt to cover any special field of application in chemistry or biology but will be based on simple chemical experiments selected and designed to give participants a maximum knowledge and ability in carrying on research with radioactive isotopes. Participants in the second of the three courses will be selected by the Atomic Energy Commission. Thirty-two participants will be selected for each course, for which a fee of $25 will be charged. Participants will be expected to pay their own travel and living expenses. Dormitory or hotel accommodations will be provided in Oak Ridge at the usual rates. The Oak Ridge Institute is composed of fourteen member universities of the South and Southeast. It utilizes facilities in the Oak Ridge Area for graduate research and instruction and is carrying on a general research and educational program in the field of atomic energy under a contract with the Atomic Energy Commission.

TEXAS

Plague Infection in Rat Fleas.—The Texas State Board of Health reported December 23 that plague infection had been found in Dawson County in a pool of 141 fleas from 14 pack rats collected October 2-3. Plague was first reported in native rodents in Texas in Cochran County in 1946 and in Dawson County in May 1947. At that time the state department of health, cooperating with the Communicable Disease Center of the U. S. Public Health Service, undertook a study in the affected counties to determine factors influencing spread of the disease. All rodent ectoparasites collected are forwarded to J. Vernal Irons, Sc.D., Director of Laboratories, Texas State Board of Health, Austin, for the identification of pathogenic organisms.

UTAH

Annual Ogden Surgical Meeting.—The third annual meeting of the Ogden Surgical Society will be held May 19-21 at the Hotel Ben Lomond in Ogden. The program includes the following guest speakers: James H. Bloomfield and Lester R. Dragstedt, Chicago; Louis A. Buie and Ralph K. Ghormley, Rochester, Minn.; Charles S. Cameron, New York; I. Minis Gage, New Orleans; George Crile Jr., Cleveland; Emile F. Holman, San Francisco; Howard P. Lewis, Portland, Ore., and Robert A. Moore, St. Louis. The meeting is open to all physicians who are members of their respective county societies. There is no registration fee. Hotel reservations may be made through Dr. Douglas C. Barker, 727 Eccles Building, Ogden.

WEST VIRGINIA

Home Town Medical Care for Veterans.—The new agreement between the Veterans Administration and the West Virginia State Medical Association, providing for continued home town medical care for veterans, has been approved effective April 1. The fee schedule which surplants the one formerly in force was mailed before April 1 to each of the nine hundred and six members of the association who participate in the program.

State Health Conference.—The West Virginia State Health Conference will be held May 27 at Hotel Prichard, Huntington. Speakers will include:

Dr. Boyd R. Sayers, Washington, D. C., United Mine Workers of America Welfare and Retirement Fund.
Robert Koepsen, Ph.D., Lansing, Mich., School Health Services.
Roscoe P. Kandle, New York, Health Survey in West Virginia.
Felix J. Underwood, Jackson, Miss., Problems of Improving the Supply of Professional Personnel.
Miss Donna Pearce, Richmond, Va., Newer Trends in Public Health Nursing in the Total Health Program.
Dean W. Roberts, Baltimore, Control of Chronic Diseases.
Mr. Elton D. Woolpert, Washington, D. C., Current National Health Legislation.

WISCONSIN

Marquette University Alumni Clinic.—The Spring Clinic of the Marquette University Alumni will be held May 13 at the Milwaukee County Hospital in the morning; and there will be a program beginning at 2 p.m. in the auditorium of the medical school. Subjects to be discussed include "Gallbladder Disease with Coronary Heart Involvement," "Curtis Grafts for Hernia," "Carcinoma of the Lower Colon" and "Treatment of Deafness."

Graduate Teaching Clinics.—The Council on Scientific Work of the State Medical Society of Wisconsin has arranged three Postgraduate Teaching Clinics for June 1-3. They are scheduled at the Hotel Stoddard, La Crosse, June 1; at the Hotel Wausau, Wausau, June 2, and at the Hotel Manitowoc, Manitowoc, June 3. The teaching staff will be Drs. John W. Harris, University of Wisconsin Medical School, Madison; Arthur A. Schaefer, Marquette University School of Medicine, Milwaukee; Reynold A. Jensen, University of Minnesota Medical School, Minneapolis, and Willard O. Thompson, University of Illinois College of Medicine, Chicago. In the late afternoon of each clinic the local county medical society will present a pathologic clinical conference with all four members of the faculty as participants. The registration fee of $4, which will cover the noon luncheon, should be sent to C. H. Crownhart, Secretary, State Medical Society, 917 Tenny Building, Madison 3.

GENERAL

Anniversary of School for Mentally Deficient.—The meeting of the American Association on Mental Deficiency in Boston May 18-22 marks the one hundredth anniversary of the first school for mentally defective children in America, established in South Boston and being continued at the Walter E. Fernald State School in Waverley. All those interested are invited. For reservations for rooms write direct to the Copley Plaza Hotel.

Research on Peptic Ulcer.—A finance committee, under the chairmanship of Dr. Clifford J. Barborka, Chicago, is seeking funds to finance research in the field of peptic ulcer. A committee of the American Gastroenterological Association for the study of peptic ulcer disclosed a need for coordination of studies on peptic ulcer, and a larger number of trained investigators. The committee was empowered with three subcommittees to evaluate the three fields, vagotomy, psychosomatic phases of ulcer and hormones in ulcer research and therapy. Members of the National Committee for the Study of Peptic Ulcer are: Dr. David J. Sandweiss, Detroit; Drs. Barborka, Andrew C. Ivy and Dr. Sara Jordon, Boston; Dr. T. Grier Miller, Philadelphia, and Dr. Owen H. Wangensteen, Minneapolis.

Pediatric Meeting.—The American Pediatric Society and the Canadian Society for the Study of Diseases of Children will meet May 24-26 at the Chateau Frontenac, Quebec, under the presidencies of Dr. Grover F. Powers, New Haven, Conn., and Dr. Alan Ross, Montreal, respectively. Subjects to be discussed include the psychotherapeutic role of the pediatrician, thyroid deficiency as a factor in conditioning the development of celiac disease, angiocardiography in congenital heart disease and the Rh factor. A symposium on viruses will be held on Wednesday beginning at 9 a.m. An informal dinner at 5:30 p.m. is scheduled for members and guests of both societies. The guest speaker will be William W. Greulich, Ph.D., professor of anatomy, Stanford University School of Medicine, Stanford University-San Francisco, on "Observations on the Children of Hiroshima and Nagasaki."

Medical Librarians' Meeting.—The forty-seventh annual meeting of the Medical Library Association will be held at the Warwick Hotel, Philadelphia, May 28-30, under the presidency of Mrs. Eileen R. Cunningham, Nashville, Tenn. The fiftieth anniversary of the Medical Library Association will be commemorated in the opening session. Dr. T. Archibald Malloch, librarian, New York Academy of Medicine, and Chauncey D. Leake, Ph.D., vice president, University of Texas, Galveston, will speak. Group meetings for various types of libraries will be held Friday afternoon. Problems to be discussed include those relating to training and personnel, exchange of material, indexing and abstracting. The annual dinner will be held at the Warwick Hotel on Saturday, 7 p.m. Dr. O. H. Perry Pepper, University of Pennsylvania, will speak on "Verbum Sap. Sat."

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International Congress of Climatology and Thalassology.--American physicians are invited to attend the International Congress of Climatology and Thalassology at Riccione (Forli, Italy) June 12-13. Modern climatology in relation to the organization of Institutes for Thalassotherapy and Heliotherapy will be discussed. A preliminary program lists the following guest speakers: Drs. Alvar Gjertz, director, Institute for Physical Therapy of Karolinska Sjukhuset, Stockholm, Sweden; Jose de San Roman y Rouyer, director, Institute for Physical Therapy and Medical Hydrology, University of Madrid, Spain; F. Scheminsky, director, Institute for Scientific Research of Gastein, Innsbruck, Austria; Karl M. Walthard, director, Institute for Physical Therapy, University of Geneva, Switzerland. Information may be obtained from the secretary, Dr. Gino Moro, Direttore dell' Ospedale Civile, Riccione (Forli, Italy).

American Physical Therapy Association.--This Association will hold its annual convention May 23-28 at the La Salle Hotel, Chicago, Among the speakers will be Dr. Louis B. Newman and Miss Viola Bryson of the Veterans Administration Hospital, Hines, Ill., who will demonstrate the management of patients with injuries of the spinal cord. Dr. Sumner L. Koch, Chicago, will discuss nerve and tendon injuries of the hand; Dr. Harry D. Bouman, Madison, Wis., will speak Tuesday on physiology applied to muscle reeducation. Wednesday will be devoted to poliomyelitis. Speakers will be:

Robert L. Bennett Jr., Warm Springs, Ga., Functional Testing and Functional Training in the Care of Convalescent poliomyelitis Patients.
Earl D.W. Hauser, Chicago, Care of Poliomyelitis from a Functional Point of View.
Gene DeTakats, Chicago, Clinical Aspects and Treatment of Peripheral Vascular Disease Including Physical Therapy.
David I. Abramson, Chicago, Physiology of Peripheral Circulation Including Pharmacology.

Eastern Electroencephalographers.--The annual meeting of the Eastern Electroencephalographers will be held May 15 at the U.S. Naval Hospital, Bethesda, Md. Clifford A. Swanson Surgeon general, U. S. Navy, Washington, D. C., will give the address of welcome. The program includes:

Frederick S. Brackett, Ph. D., Bethesda, Md., Electrochemical Phenomena at Surfaces.
Rafael Lorente de No, New York, Fields of Action Currents of Traveling Nerve Impulses.
Detlev W. Bronk, Ph. D., Philadelphia, Origin of Rhythmic Potentials in the Nervous System.
Harold E. Hinwich, U.S. Army, Convulsant Patterns Produced by Electroencephalographic Diisopropyl Fluorophosphate.

At the Subscription Dinner in the Wardman Park Hotel, Washington, D. C., Lawrence C. Kolb director of research projects, Mental Hygiene Division, U. S. Public Health Service, will be the speaker.

Gordon Research Conferences.--Neil E. Gordon, Ph.D., professor of chemistry, Wayne University, Detroit, was honored at a dinner April 20 in Chicago, at ceremonies to rename the Gibson Island Research Conferences, which he originated, the Gordon Research Conferences. Begun in 1930, under the sponsorship of the American Association for the Advancement of Science, the annual summer-long conferences have brought together experts for the pooling of research data and the stimulation of suggestions aimed at the advancement of chemistry frontiers. Gifts from fifty-three industrial companies and from private research laboratories have aided the work. This year the conferences will be held from June 21 to September 3 at Colby Junior College, New London. Subjects of the program include vitamins and nutrition, foods and nutrition, medicinal chemistry and cancer. Additional information may be obtained from W. George Parks, Director, Department of Chemistry, Rhode Island State College, Kingston, R. I.

International Congress on BCG Vaccine.—The first International Congress on BCG Vaccine will be held in Paris, France, June 18-23 under the auspices of the president of the French Republic and members of the government of France, with Dr. C. Guerin, president, and Dr. L. Negre and Dr. J. Bretey, secretaries general. The subjects to be discussed are: experimental study of BCG vaccine and its modes of administration; results of its use in human patients; results obtained in veterinary practice and procedure with regard to its application within the frame of social action and prophylactic hygiene. The registration fee is 1,000 francs for the active members and 500 francs for the associated members. Information may be obtained from the secretary general of the Congress on BCG Vaccine, Institut Pasteur, 25, Rue du Docteur Roux, Paris, 15e.

CANADA

Annual Meeting of Canadian Medical Association.—The seventy-ninth annual meeting of the Canadian Medical Association will be held in the Royal York Hotel, Toronto, Ontario, June 21-25, under the presidency of Dr. Frederick G. McGuinness, Winnipeg, Manitoba. Round table conferences have been arranged for Wednesday, Thursday and Friday from 9 to 10:30 a.m., to be followed by general sessions. Guest speakers include: Frank B. Walsh, Baltimore, myasthenia gravis; Phillip S. Hench, Rochester, Minn., subject to be announced; Bryan G. Maegraith, Liverpool, England, physiologic approach to medical problems; Sir William Fletcher Shaw, Manchester, England, the scientific outlook, and Clarence O. Sappington, Chicago, modern methods of health protection in industry. The Lister Lecture will be given by Dr. William E. Gallie, Toronto, on "The Practice of Surgery in Canada."

LATIN AMERICA

Summer Course on Tropical Medicine.—From July 5 to August 5 a special course on tropical medicine will be given in Lima, Peru, with the cooperation of members of official and university institutions. The course will chiefly include subjects related to verruga peruana (Carrion's disease) and the physiologic and pathologic aspects of life at high altitudes. Lectures will be supplemented by laboratory work and trips to areas where personal experience in the aforementioned subjects may be obtained. The National Tourist Corporation of Peru is in charge of the travel arrangements. Information may be obtained from the Institute of International Education, 2 West 45th Street, New York 19.

Marriages

LEONARD B. ROSE, Bladensburg, Md., to Dr Beatrice J. Kartus of Washington, D.C., January 11

CONSUELO IVES to Mr. Frank Bruce Ashley Jr., both of New York, January 31.

WILLIAM REYNOLDS NESBITT, Richmond, Calif., to Miss Bernice Bedwell at Berkeley, February 20.

JOHN HENRY DOHERTY, Scranton, Pa., to Miss Florence Eileen Duffy of New York, January 31.

Deaths

Gerald Bertram Webb ● Colorado Springs, Colo.; born in Cheltanham, England, Sept. 24, 1871; Denver College of Medicine, 1896; member of the House of Delegates of the American Medical Association, 1920-1921; fellow and formerly vice president of the American College of Physicians; member and past president of the Colorado State Medical Society, National Tuberculosis Association, American Association of the History of Medicine, American Clinical and Climatological Association and the Association of American Physicians; member of the American Association for Thoracic Surgery; specialist certified by the American Board of Internal Medicine; past president of the Colorado Board of Medical Examiners; had been delegate to several international congresses on tuberculosis; during World War I senior tuberculosis consultant with the American Expeditionary Forces; associated with the Glockner Sanatorium and Hospital and the Union Printers Home and Tuberculosis Sanatorium; president and research director of the Colorado Foundation for Research in Tuberculosis; in 1939 awarded the Trudeau Medal of the National Tuberculosis Association; received the doctor of science degree from Colorado College in 1936 and from the University of Colorado in 1939; author of "Tuberculosis", and "Rene Theophile Hyacinthe Laennec; a memoir"; joint author of "Henry Sewall, Physiologist and Physician," "Overcoming Tuberculosis"; died January 27, aged 76, of coronary thrombosis.

Charles Henry Henninger ● Pittsburgh; born in Butler County, Pa., Sept. 16, 1874; Western Pennsylvania Medical College, Pittsburgh, 1900; professor of psychiatry at his alma mater; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the House of Delegates of the American Medical Association from 1941 to 1944; served as president of the Medical Society of the State of Pennsylvania, Allegheny County Medical Society, Pittsburgh Academy of Medicine, Pennsylvania Hygiene Committee, Public Charities Association, Pittsburgh Neuropsychiatric Society and Pennsylvania Psychiatric Society; member of the Association for Research in Nervous and Mental Diseases and the Pittsburgh Biological Society; a major in the medical corps of the U.S. Army during World War I; served as clinical director and assistant superintendent of the State Institution for the Feebleminded and Epileptics, Polk, Pa., from 1901 to 1905; at various times on the staffs of St. Francis, Children's, Elizabeth Steel Magee, Columbia and St. John's hospitals; member of the consulting staffs of the Pittsburgh City Home and Hospitals in Mayview and of the Allegheny County Workhouse; died February 18, aged 73, of coronary occlusion.

James Day Edgar ● Captain, U.S. Army, retired, Whittier, Calif., born in Redfield, S.D., Nov. 16, 1889; University of Minnesota Medical School, Minneapolis, 1915; specialist certified by the American Board of Pathology, Inc.; member of the American Society of Clinical Pathologists; served during World War I; entered the medical corps of the U.S. Army in June 1918; retired July 31, 1922 for disability sustained in line of duty; returned to active duty from August 1924 to August 1939; pathologist at Murphy Memorial Hospital; died January 20, aged 58.

Connie Holt King ● Duxbury, Mass.; born in Headsland, Ala; July 16, 1907; University of Tennessee College of Medicine, Memphis, 1929; formerly a medical officer in the U.S. Navy and an intern at the U.S. Naval Hospital in Norfolk, Va.; served a residency at the Norfolk County Hospital in Braintree; associate medical examiner for Plymouth County; school physician; formerly a medical officer of the U.S. Public Health Service; on the staff of the Jordan Hospital in Plymouth; died January 22, aged 40, of coronary thrombosis.

William Gee Allen ● Erie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1918; fellow of the American College of Surgeons; chief of the surgical staff of Hamot Hospital; died January 23, aged 59.

William Benjamin Allums, Shreveport, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; member of the American Medical Association; fellow of the American College of Surgeons; died January 30, aged 65.

Franklin F. Arndt, Scranton, Pa.; University of the City of New York Medical Department, New York, 1883; member of the American Medical Association; served on the staffs of the Hahnemann Hospital, Pittston (Pa.) Hospital, Wilkes Barre (Pa.) General Hospital and the Nesbitt Memorial Hospital in Kingston; died January 11, aged 88, of carcinoma.

Elliott L. Baker Sr., Columbus, Ga.; Atlanta Medical College, 1895; served during World War I; died January 10, aged 72.

Walter A. Bayley ● Los Angeles; University of Southern California College of Medicine, Los Angeles, 1905; associate clinical professor of surgery at his alma mater; fellow of the American College of Surgeons; specialist certified by the American Board of Surgery; served during World War I; affiliated with Presbyterian Hospital-Olmsted Memorial and California, Methodist, Cedars of Lebanon and Mount Sinai hospitals; died in the Veterans Administration Hospital in West Los Angeles January 4, aged 67.

Edgar Rolland Beidelman ● Bethlehem, Pa.; Jefferson Medical College of Philadelphia, 1915; for many years affiliated with St. Luke's Hospital, where he died January 26, aged 63, of cerebral hemorrhage.

Frank M. Bleakney, Grove City, Pa.; Jefferson Medical College of Philadelphia, 1900; died recently, aged 71, of cardiorenal vascular disease.

Delphia Louk Brower, Rialto, Calif.; University of Kansas School of Medicine, Kansas City, 1944; interned at the Orange County General Hospital in Orange; affiliated with the St. Bernardine's Hospital, San Bernardino, where he died December 29, 1947, aged 30, of leukemia.

William Sydney Burgess, Sumter, S. C.; Medical College of the State of Carolina, Charleston, 1912; member of the American Medical Association; attached to the British Army and served as captain in the U. S. Army during World War I; for many years affiliated with the Tuomey Hospital, where he died January 31, aged 57.

Andrew Carr, Minot, N.D.; Rush Medical College, Chicago, 1888; member of the American Medical Association; past president of the North Dakota State Medical Association; affiliated with Trinity and St. Joseph's hospitals; died January 22, aged 93, of senility.

William Henry Chambers, McKeesport, Pa.; Ohio Medical University, Columbus, 1898; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; for many years a member of the board of health; died January 21, aged 74, of carcinoma.

Frederick George Clark, Los Angeles, Jefferson Medical college of Philadelphia, 1908; died January 9, aged 71.

Foreign Letters

PARIS

(From Our Own Correspondent)

March 1, 1948.

Typhoid

H. Vincent has recently demonstrated the effect produced by the injections of two separate toxins in animals. Guinea pigs receiving neurotoxin manifest characteristic prostration as the predominant factor before death; those receiving enterotoxin show congestion of the small intestine as well as of the adrenal capsule and Peyer's patches at necropsy. These last ulcerated during a slow death (two to three days). Horses are extremely responsive to subcutaneous or intravenous injection of the two toxins. Early restlessness followed by prostration for two to twelve hours, diarrhea, acceleration of the pulse rate and respiratory rate and fever occur. In this way the author establishes the essentially toxemic character of typhoid. Remarkable successes occur in patients treated with a purely antitoxic serum.

R. Dana reported 105 cases of serious typhoid treated orally with 3 to 4 Gm. of sulfonamide drugs if the urine showed colon or paracolon bacilli or other organisms. If there was leukocytosis with polynucleosis he gave sulfonamide drugs by injection (2 to 3 Gm. a day). Penicillin is added (200,000 to 1,000,000 units) if sulfonamide drugs fail. Transfusions of citrated blood are given at frequent intervals in serious cases. Contraindications to the use of sulfonamide drugs are nephrotyphus with hematuria and severe azotemia and the appearance of cyanosis. The recovery rate is high. The former death rate for Tunisia (20 to 30 per cent) is reduced to 3 per cent at the Liberation Hospital.

Bacteriophage and Penicillin

The French Society of Bacteriology has commemorated the thirtieth anniversary of the discovery of bacteriophage by Professor d'Herelle, who emphasized the importance of bacteriophages in the treatment of war wounds. A. Raiga, formerly chief of surgical clinics of the Paris Faculty, explained the biologic causes responsible for certain failures in penicillin therapy. Infection is a problem with two factors, bacteria and terrain; there is also natural recovery: bacteriophagia. The terrain may be rendered unfavorable to bacteriophage production by antiphagic properties of the blood which oppose natural cure. Inhibitory properties were illustrated in photographs of bacteriologic preparations by N. Boulgakov. According to the author, penitillin therapy can only be successful when favored by the phenomenon of natural recovery. In 65 of 67 failures with penicillin the presence of antiphagic properties was demonstrated. Moreover, success with penicillin coincides with the absence of antiphages.

International Union Against Cancer

The board of Directors of the International Union Against Cancer will meet in Paris Dec. 10-11, 1948, for the first time since the war. Elections will be held, and place and program of the Fifth International Congress for Cancer will be considered. Modification of statutes of the International Union Against Cancer and their adaption to decisions of the fourth congress toward establishing a Research Committee with financial autonomy will also be considered.

The quarterly review "Acta," published by the International Union Against Cancer, has resumed publication after seven years' interruption. For information apply to the headquarters of the organization, 6 Avenue Marceau, Paris, 8.

First International BCG Congress

At a meeting of the National Academy of Medicine, Guerin and Weill-Halle, back from the United States, related the interest in BCG vaccination at the New York International Congress of Pediatrics. They believe that the time has come to compare, on an international scale, the various technics and to discuss their respective effectiveness. The academy fully endorsed their resolution to convene an International BCG Congress. It has been organized by the Pasteur Institute and will take place in Paris June 18 to 23, 1948, under the honorary presidency of Professor Trefouel, director of the Pasteur Institute, and under the presidency of Dr. Guerin. The following subjects are on the agenda: (1) experimental study of BCG vaccine and methods of administration; (2) results of its use in human beings; (3) results obtained in veterinary practice, and (4) methods of application in the fields of social action and preventive hygiene. This congress will also commemorate the beginning of the use of BCG in man and will celebrate the fifthieth anniversary of the Lille Pasteur Institute, which was founded by Calmette and in the laboratory of which he and Guerin have carried on most of their experiments on BCG vaccine. For information apply to: Secrétariat Général du BCG, Institute Pasteur, 25 Rue du Docteur Roux, Paris, 15.

Congresses

An International Hematology Meeting, organized by the French Society for Hematology, Professor P. Chevallier presiding, will take place in Paris May 22-23, 1948 at Hotel Dieu hospital.

An International Meeting of Medical Students (under Laennec organization) at the International Cultural Center of Royaumont (Seine and Oise) will be held July 20-30, 1948. Experimentation on the human being, artificial insemination, birth control, social security and modern eugenics will be considered. For information apply to Secretary's office, 12 Rue D'Assas, Paris, 6.

ITALY

(From Our Regular Correspondent)

Naples, March 16, 1948.

Epidemic of Homologous Serum Hepatitis

One of the gravest epidemics of homologous serum hepatitis ever known recently occurred in Italy in Varese, a small town near Milan. The responsibility for the epidemic is said to lie on a self-practicing doctor of the town, who is now in custody pending investigation. Having practiced there for years, this doctor has attended some 17,000 persons (about 32 per cent of the entire population) and has done an average of fifty intravenous injections per day. Patients inoculated with his own drugs commenced to show, a few days afterward, general debility, vomiting and then, either with or without fever, symptoms of jaundice. First deaths from the disease came toward the end of 1946, and the number soon amounted to 12. At least 100 other patients showed symptoms of the illness. All had been treated by this doctor, except 1 child. The mother of the child, however, was treated with fatal results.

At first this doctor was not suspected of aiding the spread of the infection, in view of his fine professional record. Then suspicion began to fall on the drugs used in treatment, drugs provided by the doctor himself. It appears that, owing to a shortage, he had used drugs taken over from the German troops previous to their expulsion from Italy. Since the Germans had poisoned the water supplies before leaving, it was feared that the drugs were also contaminated. Laboratory examination, however, showed them to be free from adulteration. Meanwhile, growing apprehension indicated that there must be a connection between his treatment and the increased occurrence of infection. He then began to send patients to Milan for treatment as soon as the illness was diagnosed. In the course of a week the hospitals of Milan had dozens of cases of jaundice, all of which could be traced back to Varese. After what was considered a grave transgression of procedure on the part of the doctor, as reported by the director of the Varese hospital, the doctor was arrested and charged with having transposed the names on tubes containing blood samples of 2 patients, 1 from his own ward, and 1 from another ward not under his supervision. The samples of blood from his patient was to have been tested for the presence of germs which could only have been introduced by one of his previous injections.

It was thought that the doctor was at fault in his technic used in sterilization of the instruments. He did not always subject needles and syringe to boiling for as long as twenty minutes. Often, owing to the large number of patients treated, he boiled the instruments for only four minutes. He used disinfecting solutions of Swiss manufacture, but he had never suspected them. The epidemic remained mysterious and the inhabitants of Varese were terrified by this menace in their midst. A Swiss citizen then wrote to the Italian press describing a similar epidemic which had broken out a few months before at Basilia. The *Neue Zürcher Zeitung* had described this epidemic and referred to the high death rate. It was then supposed that the first source of infection in Italy was a Swiss citizen who had probably been treated by the doctor of Varese. But while the doctor was under arrest, other cases of the "yellow disease" occurred in a town near Lake Maggiore, where the unfortunate doctor had never been. Justice, however, seemed to ignore this fact and the doctor is still being held pending court proceedings.

COPENHAGEN

(From Our Regular Correspondent)

April 9, 1948.

A New Domus Medica at Last

On March 29, 1947 an account was given in these columns of plans for rebuilding Domus Medica, the headquarters in Copenhagen of the Danish Medical Association and the Danish Medical Society. This building, burned during the German occupation of Denmark, had stood as the symbol of all that is best in Danish medicine. Hence the determination to rebuild it as soon as possible, whatever the difficulties. Three million Danish kroner were mentioned as a likely estimate. Even if this sum were forthcoming, how many years would be needed in which to convert it into bricks and mortar?

Matters were at this none too cheerful stage when, on January 23 of this year, Dr. V. A. Fenger, the enterprising secretary of the Danish Medical Association, happened to read in the daily press an advertisement of a palatial building in Copenhagen for sale. The owner was promptly approached and negotiations were started. Representatives of the Medical Association and the Medical Society inspected the building and were greatly impressed by it. The Central Committee of the Medical Association met on January 31, and on February 8 an emergency meeting of the representatives of the association was held. At this meeting the pros and cons were discussed, and the pessimists were given an opportunity to join issue with the optimists. A two-thirds majority was required for this prospective purchase, and it was obtained by the optimists by a narrow margin, 52 to 26. The purchase price is 1,500,000 Danish kroner, and the Medical Association will take possession on June 1, 1948. The necessary alterations will, of course, be costly, but by renting the space it does not need to other bodies, the medical association will be able to obtain some immediate return on its outlay. This new Domus Medica will, of course, be of greater use to the physicians of Copenhagen than to those in the provinces; and in order to repair this inequality to some extent, it is proposed that students from doctors' homes in the country shall be lodged in this building, which will thus acquire the character of a residential college.

Contraceptive Education

Broadly speaking, Danish physicians belong to two main groups in the matter of contraceptives. The older doctors learned nothing about them when young, and many have held aloof from them ever since. For the younger physicians contraception was a subject on which, as medical students, they had to satisfy their examiners. Both groups look to the Danish Medical Association for guidance on the principles governing this problem, and now the Central Committee of the association has issued a memorandom couched in no uncertain terms. Physicians are urged not only to master this subject but also, in individual cases, to act on their own initiative when considerations of health, heredity or particularly difficult social circumstances contraindicate future pregnancies. The Hygiene Committee of the Danish Medical Association has for several years been studying contraception by certain chemicals in hope that they may replace the pessary, whose manipulation requires a dexterity which is sometimes lacking. This committee is hopeful over the prospect of finding a chemical whose application can be varied so as to meet all the requirements of patients with different mental, social and esthetic standards.

Abortions Induced for Psychiatric Reasons

Among 600 presumably pregnant women admitted to the Psychiatric Department of the Bispebjaer Hospital in the seven year period July 1938 to July 1945 were 547 candidates for induced abortion. Dr. C. Clemmesen and Dr. Gertrud Kirkegaard have classified these patients as follows: 10 proved not to be pregnant, 12 aborted spontaneously in the hospital and 400 were refused abortion. Thus abortion was induced in only 125 cases. A comparison of the ages of the women granted or refused abortion showed a fall of the refusal rate as the age rose. There was little difference between the married and the unmarried in this respect, but the refusal rate was comparatively high among widows and wives separated or divorced from their husbands. The refusal rate was lower when the prospective father was a casual acquaintenance than when he was the husband or lover. The main indication for the induction of abortion was ill health in 42 per cent and the risk of suicide in 16 per cent.

Correspondence

MORE ABOUT VAGOTOMY

To the Editor:—The editorial entitled "More About Vagotomy" on page 255 of the January 24 issue of THE JOURNAL states, "There is also a definite effect on the secretion, in most instances shown by histamine achlorhydria." The writer undoubtedly meant to say "insulin achlorhydria." All the evidence clearly shows that the hydrochloric acid secretion produced by histamine stimulation is not abolished by vagotomy. The insulin test of gastric secretion is generally recognized as a reliable means of determining whether the vagotomy has been complete, so that it is quite probable that the writer had this test in mind when he wrote the statement quoted.

MORRIS KESILMAN, M.D., Philadelphia.

COMMENT.—The statement that "there is also a definite effect on the secretion, in most instances shown by histamine achlorhydria" was unfortunately an error. There appears to be no abolition of secretion after a perfect vagotomy. What is abolished is the cephalic phase of the secretion. Vagotomized stomachs, according to Dragstedt, will react with secretion not only to histamine and to insulin but also to a protein meal. The claim that Dragstedt makes with regard to this particular point is that the cephalic phase of the secretion is abolished. The sentence quoted by Dr. Kesilman would be wrong even if "insulin" were substituted for "histamine." —Ed.

To the Editor:—I cannot agree with your comment in its entirety, specifically where you state that Dragstedt claims that the vagotomized stomach will secrete in response to insulin stimulation. In the November 1947 issue of *Annals of Surgery*, page 687, he makes the following statement:

In these 168 patients, the vagus section was complete in 142 cases as evidenced by a reduction in the night secretion of gastric juice, a decrease of over 60 per cent in the total hydrochloric output from the stomach, and a negative secretory response to insulin hypoglycemia.

On page 688 he summarizes the case histories of 2 patients who had recurrences after vagotomy and in whom the insulin test was positive, indicating that the vagotomy had been incomplete. These patients were reoperated on and in each the remaining vagus fiber was found and sectioned, after which the test became negative. A protein meal invokes the local humoral mechanism through the mediation of the hormone called gastrin, which is believed by some to be identical with histamine and is not affected by vagus nerve function.

The statement that vagotomy abolishes the cephalic phase of gastric secretion is correct, but I do not like to use this term because of its association with the description of the so-called psychic, or appetite, secretion which occurs prior to the ingestion of food. This tends to narrow the influence of vagus activity in the mind of the reader and neglects to emphasize the important interdigestive and the nocturnal gastric secretion which are also under vagus control. Dragstedt usually describes vagotomy as abolishing the nervous phase of gastric secretion.

MORRIS KESILMAN, M.D.,
2132 Pine Street,
Philadelphia.

LEGISLATION ON AIR POLLUTION

To the Editor:—My interest in the control of urban air pollution led me to seek further information on the Niagara Falls, N. Y., ordinance which was given such enthusiastic mention in the Medical News columns (THE JOURNAL, January 31, p. 339). Direct query to the director of air pollution control at Niagara Falls elicited the information that the Industrial Hygiene Division of the U. S. Public Health Service had no part in formulating the ordinance, contrary to the statement in THE JOURNAL. Furthermore, careful perusal of the ordinance as it now stands fails to reveal anything unique in its provisions—it is patterned after the American Institute of Engineers' standard proposal, which still relies for enforcement on the constant policing of all the city's old flues and locomotive smokestacks for illegal smoke emission.

Control of smoke production by the policing of the multitude of city flues has been demonstrated to be ineffective and is being abandoned in favor of regulations which make harmful smoke production impossible. Such regulations prohibit the sale of highly volatile coal for use in hand-fired furnaces and enforce a change of Diesel or electric power for railroad switching purposes within metropolitan limits as the two most important points in smoke control.

Policing of smoke production from individual stacks and flues breaks down completely for the greater part of each winter season when the smoke problem is most acute, for the simple reason that smoke readings can be made and infractions cited only during daylight hours and absence of mists or fogs. Even on clear days of cold winter weather, the white steam emitted by locomotives can effectively mask dense smoke.

In view of the exceedingly significant relationship of air pollution to respiratory disease death rates in industrial cities, it is important that those interested in personal and public health insist on really effective legislation whenever the matter is under consideration in their home community.

CLARENCE A. MILLS, M.D., Cincinnati 39.

NOMENCLATURE OF FRACTURES

To The Editor.—I have just received from Dr. H. Earle Conwell of Birmingham, Ala., a reprint of his note to THE JOURNAL with regard to nomenclature of fractures. Dr. Conwell recommends the term "complex simple fracture" for "complicated simple fracture" and quotes Webster's definition of complex. However, he quotes only the definition of the noun, which does not apply. To make sense he should have quoted the definition of the adjective, viz., "involving many parts; complicated; intricate." Not to complex (Webster's transitive verb) the issue, the real confusion stems from the original terms, simple and compound, neither of which means anything as applied to fractures.

As one not learned in etymology or other branches of philology, including semasiology, but acknowledging the need of descriptive values in nomenclature, I suggest dropping the designations "simple" and "compound" in favor of "closed" and "open." Qualifying adjectives such as complicated, crushing or comminuted should be used together with morphologic descriptive terms as to location of the fracture in the bone and its direction.

Certainly a fracture of the tibia and fibula with the skin unbroken but everything else in the leg completely smashed can hardly be called a simple fracture, no matter what descriptive adjectives may be applied fore or aft.

RICHARD B. DILLEHUNT, M.D., Portland, Ore.

Miscellany

SITUATION IN PSYCHIATRY

Dr. William C. Menninger in the January *Bulletin of the Menninger Clinic* has compactly compiled "Facts and Statistics of Significance for Psychiatry."

1. *Military Service.*—Among 15 million men examined for U. S. military service in World War II, 1,846,000 were immediately rejected, 250,000 were discharged administratively and 382,000 were discharged medically, a 2,480,000 man power loss due to neuropsychiatric disorders. Among all medical discharges, 37 per cent in the army and 32.4 per cent in the navy were due to neuropsychiatric disorders. Administrative discharges both in the army and the navy included cases of psychopathic personality, mental deficiency, drug addiction and homosexuality. Combat produced two types of casualties, both arising from conditions over which the men themselves had little or no control; the one received an honorable discharge due to physical injury or illness and the other on discharge was stigmatized as neuropsychiatric.

2. *Mental Hospitals.*—There were 100,000 new admissions to state mental hospitals in 1943 and 271,209 admissions in 1946. In 1946, of a total United States hospital bed capacity of 1,468,714, 674,939 were in mental hospitals, or 46 per cent of total bed capacity. American Hospital Association figures for the year ending September 1946 state that 51 per cent of all hospital beds were for mental patients.

3. *Minor Mental Disorders.*—In military service 3 to 7 per cent of all trainees were seen at mental hygiene clinics; of these, only 7 per cent needed hospitalization. Spot surveys in civilian life indicate that 30 per cent of hospitalized medical and surgical patients are somewhat neurotic, 58 per cent of an unselected group of patients displayed harmful mental reactions and in 26 per cent of the group emotional reactions were the chief cause of illness. Forty-eight per cent of patients consulting gastroenterologists have no organic gastrointestinal disease.

A wide variation occurs in estimates of incidence of functional disorders among all patients consulting physicians. Estimates vary from 35 to 70 per cent, averaging about 50 per cent.

4. *Costs.*—Standards approved by the American Psychiatric Association are $5 per day for acutely ill and recovering patients and $2.50 per day for those with chronic states. Actual costs for general hospital patients average $7 to $11 per day. Present expenditures for mental patients are $1.05 per day or approximately $165,000,000 per year; an average of at least $5 per patient day, which is about $700,000,000 per year, is needed. Dr. Menninger compares this needed cost to other examples of consumer expenditures, indicating that the needed figure is still $150,000,000 per year less than expenditures now made for funeral services, cemeteries and tombstones.

5. *Personnel.*—Approved standards for state hospitals average one psychiatrist for 30 to 50 regular patients and one psychiatrist for 200 senile and arteriosclerotic patients. Army standards require one psychiatrist to 50 patients. Based on figures for 1945 there is shown to be a deficit of 42 per cent of employees of all categories, 74 per cent of physicians, 92 per cent of psychologist, 80 per cent of nurses, 87 per cent of dietitians and 71 per cent of social workers.

Four thousand, four hundred and thirty-two psychiatrists are registered in the membership of the American Psychiatric Association. An estimated immediate need for 10,000 to 14,000 additional psychiatrists exists. It was stated that the Veterans Administration alone could easily use to advantage all first class psychiatrists in the country at the present time. Comparable deficiencies of clinical psychologists, psychiatric nurses and psychiatric social workers exist. There are now needed 1,700 additional clinical psychologists, and an estimated 4,500 to 10,000 psychiatric social workers; the Veterans Administration alone will need more than 5,000 additional psychiatric nurses.

6. *Training Opportunities and Needs.*—Average medical school curriculums of 5,000 hours allot only 1 to 5 per cent of the time schedule for training in psychiatry in contrast to the 30 to 50 per cent of all patients seen in medical practice who present problems that are primarily mental. In 1946 there were 758 approved internships and residencies in psychiatry in one hundred and fifty-five hospitals. The Veterans Administration currently has 401 residencies in psychiatry and expects to increase this number to 600 by 1948 and to 1,083 by 1960. Thirty-one universities now offer training in the field of clinical psychology; but there is a shortage of facilities for training. The Veterans Administration is providing additional facilities for training psychiatric social workers. Psychiatric nursing is now included as a postgraduate course in the curriculums of ten universities and several graduate training centers.

7. *Research.*—Psychiatric research was estimated to amount to only $2,000,000 a year, although loss from mental ill health amounts to over a billion dollars yearly. For every dollar spent on psychiatric research $65 are spent on other types of medical research and $2,500 in industrial research. In poliomyelitis research costs average $100 per case and in psychiatry, $1 for each known case of total mental disability.

8. *Social Problems.*—Social problems having important significance for psychiatry are considered. Certain problems represent the result of mental ill health, others are causes of mental ill health and still others are evidence of existing mental health.

(a) Comparative Costs: Comparative expenses for constructive purposes and for luxury are stated as follows:

Comparative Costs

Constructive Expenses

Medical care, 1945	$3,600,000,000
Recreation, 1945	$3,000,000,000
Public school expenditures, 1940	$2,308,000,000
Reading material, 1942	$1,000,000,000

Luxury Expenses

Beer, wine, liquor, 1946	$7,700,000,000
Tobacco, 1945	$3,000,000,000
Jewelry, 1945	$3,100,000,000
Cosmetics, 1946	$699,600,000

(b) Accidents and Alcoholism: Three hundred and fifty thousand disabling accidents occur yearly, of which 22 per cent result wholly from personality causes and 60 per cent from a combination of mechanical and personality causes. There are 600,000 chronic alcoholic addicts in the United States and 2,400,000 excessive drinkers. In 1945, 750,000 persons were defined as having a diagnosable bodily or mental disorder from prolonged excessive drinking. Conservative estimates are that alcoholism costs the American public about $1,000,000,000 yearly.

(e) Crime: In 1946, 18,698 prisoners were confined in federal institutions and approximately 118,000 prisoners in state penal institutions. Twenty-five to thirty thousand of these persons were under 21 years of age. Crimes in 1946 broke all records for the last decade, reaching a total of 1,685,203, an increase of 119,633 over 1945. The cost of crime to the American public was estimated to be between 10 and 18 billion dollars a year to operate one hundred and forty-seven federal and state penal institutions.

(d) Delinquency and Education: Two hundred and fifty thousand to 400,000 adolescents pass through juvenile courts each year, and about 29,000 "pupils" are detained in one hundred and forty-two schools for juvenile delinquents.

In 1940, 3.7 per cent of persons aged 25 years or over in the United States had no schooling and 13.5 per cent had fewer than five years of schooling. The army literacy training program provided for 107,075 men. Only one-fourth of those who leave school do so because they are not interested. Over one-half drop out because of the economic difficulties of continuance. Two million children between the ages of 6 and 15 years were not in any kind of school in 1940.

(e) Divorce: In 1915 there were 10.3 marriages per thousand to 1 divorce; in 1935, 10.4 marriages to 1.7 divorces, and in 1945, 12.3 marriages to 3.6 divorces. In numbers, 249,000 divorces were granted in 1937 and 502,000 in 1945.

(f) Illegitimacy: Eighty-three thousand births out of wedlock occurred in 1943 in the United States, exclusive of those in ten large states which do not record legitimacy on birth registrations. Almost one half of these births were to mothers 15 to 19 years of age.

9. *College Graduates.*—Both men and women fail to reproduce sufficient offspring to replace themselves; it is calculated that 2.22 children must be born per graduate to allow a child to reach the same age at which the parent graduated. Men of classes of 1922 had 1.7 children and those of 1937, 1.11 children per graduate. Women graduates of 1922 had 1.36 children per graduate and of 1937, 1.06 children per graduate.

10. *Housing.*—The national census in 1940 revealed that only 61.7 per cent of 27,723,008 nonfarm homes were standard. (A standard home is one in need of no major repairs and possessing modern plumbing—private flush toilet and bath.) More than 3,500,000 homes did not have a private toilet and bath, and 3,000,000 more lacked running water and plumbing of any description.

11. *Mental Deficiency.*—The estimated extent of mental deficiency in the United States varies from 1,500,000 to 4,500,000. Draft experience showed that 4.5 per cent of all men examined, a total of 676,300, were mentally defective. In 1941 there were approximately 115,000 mentally defective persons in institutions in the United States, 12,315 being first admissions during the year. Approximately 2 per cent of children of school age have enough difficulty to prevent their education in the usual school.

12. *Minority Problems.*—There are 13,454,585 nonwhite persons and 11,419,138 foreign born white persons in the United States. Symptoms of disorder among the majority group are prejudice, ignorance, tension, hate and fear; among the minority group, unhappiness, resentment, fear, poverty and suffering. Expressions of this problem are segregation (Jim Crowism) in housing, travel, recreation, employment, politics, education and medical care. Secret surveys of United States racial and religious intolerance show that large groups, up to 36 per cent, show envy, distrust or plain dislike for Jews, Negroes, Catholics and Protestants in various parts of the country and have suspicions that one or the other groups have too much economic or political power. Other unpublished surveys reveal that 28 per cent, on being questioned as to what should be done about it, favored taking strong measures for changes in the direction of greater tolerance (22,000,000 persons favored active measures to promote greater tolerance).

13. *Physical Handicaps.*—There are 20,000,000 disabled men and women in the United States, or one-seventh of the population. Of these, at least 1,500,000 handicapped persons could be made employable. Based on past figures, every dollar spent for rehabilitation returns $47 to society.

COMMENT

The general assumption that the mentally ill can be separated from society and segregated in hospitals under the care of physicians has changed radically. Unfortunately, however, there are far too few psychiatrists to keep up with the expanding field. Psychiatrists have tended, hampered by this lack, to limit their efforts to clinical work with a few patients rather than to try to solve the ills of the many. Psychiatrists are medical scientists with specialized knowledge which can be applied to social problems. Knowledge of these problems and their solution is now inadequate and needs extension by research and education reenforced by enlistment of additional personnel. The magnitude of the psychiatric problem has been in great part uncovered during the war years. Human unhappiness and maladjustment which were formerly accepted for lack of other solution are now considered by persons so affected as being amenable to psychiatric treatment, thereby creating increased demand for trained personnel and heavily increased expenditures for scientific research before the many associated problems to which Dr. Menninger refers may be successfully combated.

Medical Motion Pictures

NEW MOTION PICTURES ADDED TO A. M. A. FILM LIBRARY

New Frontiers of Medicine. 16 mm., black and white, sound, 600 feet (one reel), showing time seventeen minutes. Produced in 1948 by March of Time Forum Edition, New York. Procurable on loan from the American Medical Association, Committee on Medical Motion Pictures, 535 North Dearborn Street, Chicago 10.

This motion picture acquaints its audience with new medical progress by depicting the discoveries of men who are working to prolong man's life and more healthful living. New drugs such as sulfonamide compounds, penicillin and streptomycin and new fields of study such as Rh blood factor, the artificial kidney, brain surgery and nutrition are mentioned. Progress in the field of heart disease, cancer and rheumatic fever are included in the contents of this film. Scientific aids such as the fluoroscope, the x-ray machine and the electrocardiograph are demonstrated. This production should be suitable for lay audiences, especially for physicians to use in lecturing to service organizations and similar groups.

The motion picture entitled "Accident Service" which was reviewed in THE JOURNAL January 31, page 348, is now available on a loan basis through the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Practitioner, Philadelphia

2:287-356 (Jan.) 1948

Immediate Treatment of Cerebrovascular Accidents. G. de Takats and N.C. Gilbert.—p. 287.
Observations on 2,233 Blood Cultures and Their Interpretation. E. S. King.—p. 291.
Early Diagnosis of Syphilitic Aortitis. G. C. Griffith.—p. 299.
Roentgenologic Diagnosis of Syphilitic Cardiovascular Disease. M. C. Thorner and R. A. Carter.—p. 301.
Present-Day Concept of Treatment of Cardiovascular Syphilis. R. S. Cosby.—p. 306.
*Sequelae of Acute Hepatitis. M. A. Spellberg.—p. 311.
Psychosomatic Medicine in Daily Practice. B. W. Billow.—p. 321.
Treatment of Acne Rosacea. E. B. Hunt.—p. 326.
Management of Warts. M. L. Niedelman.—p. 327.
Leprosy. C. Shaw.—p. 336.
Significance of Diastolic Murmurs. S. Strauss.—p. 341.

Sequelae of Acute Hepatitis.—According to Spellberg, residuals of acute hepatitis may be classified as the chronic form, the recurrent form and the progressive irreversible type. The last is the most important type. Much contradictory opinion occurs regarding this sequela. Biopsies were obtained from 3 men aged 39, 33 and 53, respectively. The first was vaccinated against yellow fever; three months after vaccination an acute illness developed accompanied by pain in the right upper quadrant and fever for five days. He had recurrent attacks of pain in the right upper quadrant. Exploratory laparotomy revealed an enlarged liver. Microscopic examination of a hepatic segment revealed periportal fibrosis and biliary duct proliferation, warranting diagnosis of portal cirrhosis of the liver. In the second patient there developed acute hepatitis three months after his induction into the air forces. There is no definite evidence that the patient received yellow fever vaccine. Exploratory laparotomy performed after three months of medical treatment revealed an enlarged, firm and granular liver. Microscopic examination revealed disturbance of the microscopic architecture and fibrosis, which were considered compatible with a diagnosis of portal cirrhosis. Persistence of jaundice in the third patient two months after gastrectomy and blood transfusions warranted exploratory laparotomy. The liver was enlarged, granular and firm. Jaundice increased postoperatively when adequate draining of bile through a T tube occurred, indicating that extrahepatic obstruction was not responsible for the jaundice. Fibrosis was not evident microscopically, but the periportal inflammatory process was severe and the microscopic picture was classified as cholangitis. In 2 cases the original disease was of the homologous serum type and in 1 case it was probably the epidemic form. Opinion that hepatic cirrhosis may be a sequela of acute hepatitis seems warranted.

American Journal of Public Health, New York

37:1513-1644 (Dec.) 1947

Stems and Roots of Public Health Practice. H. S. Mustard.—p. 1513.
SYMPOSIUM ON HOSPITAL RELATIONS
Hospital as an Instrument in Public Health Program. V. M. Hege.—p. 1519.
Hospital Planning in New York State. J. J. Bourke.—p. 1525.
Hospital Planning and Licensing Programs in Indiana. L. E. Burney and Martha O'Malley.—p. 1533.
Hospital Services in Saskatchewan. F. D. Mott.—p. 1539.
Comparative Epidemiology of Poliomyelitis in Certain California Cities. W. M. Hanson.—p. 1545.
*Methods of Removing Fluorides from Water. P. J. Maier.—p. 1559.
Problem Drinking—A Public Health and Municipal Responsibility. L. C. Duryea.—p. 1567.
Alcohol Education—Its Needs and Challenges. J. Hirsh.—p. 1574.
Rural Prepayment Medical Care Plans and Public Health Agencies. M. Ziegler, E. R. Weinerman and M. I. Roemer.—p. 1578.

Removing Fluorides from Water.—Maier states that optimal prophylactic effect of fluorides on caries is obtained within the range of 1 to 1.5 parts per million. Greater concentrations are associated with mottled enamel or dental fluorosis. More than five hundred communities in the United States are now using public water supplies containing in excess of 1.5 parts per million of fluorides. The author shows that most removal processes now available appear to be either too expensive to operate or too complicated for routine application. Current knowledge of the chemical processes involved is limited, and additional fundamental research in this field is needed. Further, the practical usefulness of the available methods and those now undeveloped must be tested on a pilot plant scale to determine their relative worth under varying conditions. Until this information is available, endemic fluorosis will continue to be a dental hazard in many communities in this country.

Connecticut State Medical Journal, Hartford

12:1-96 (Jan.) 1948

Conservative Treatment of Thrombo-Embolic Diseases. I. S. Wright.—p. 3.
Clinical Observations on Use of Anti-Thyroid Drugs: Review of Current Literature and Report of 60 Cases Treated at Hartford Hospital. J. T. Beebe.—p. 12.
Newer Aspects of Palliative Treatment of Cancer. H. W. Neuro.—p. 17.
Medical Library of New Britain General Hospital. F. D. Rossbo and Mary V. O. Olmsted.—p. 23.
Doctors and Nurses of Other Lands. M.M. O'Brien.—p. 28.

Gastroenterology, Baltimore

9:641-832 (Dec.) 1947

Thymol Turbidity Test as Measure of Liver Disease, with Special Reference to Comparison of Turbidity at 18 Hours with That at 30 Minutes ('18 Hour Turbidity Ratio'). M. Shay, J. E. Bock and M. Siplet.—p. 641.
Thymol Turbidity Test and Impaired Liver Function. F. D. Hane, A. M. Snell and H. B. Batt.—p. 651.
*Studies of Responses of Certain Hepatic Tests in Diseases of Liver and Biliary Tract: I. Serum Cephalin Cholesterol Flocculation, Thymol Turbidity, Thymol Flocculation and Colloidal Gold Responses. J. R. Neefe, E. B. Bahnson and J. G. Reinhold.—p. 656.
*Needle Biopsy of Liver: I. General Considerations. C. W. Kempe, E. A. Gall, L. Schiff, W. E. Bolle and others.—p. 672.
Peritoneoscopic and Biopsy Evaluation of Hepatic Disease. G. McHardy, D. C. Breese and E. Edwards.—p. 682.

Human Plasma Phospholipid Formation: Study Made with Aid of Radiophosphorus. W. H. Balfour. —p. 686.

Treatment of Cirrhosis of Liver with Testosterone Propionate. B. D. Rosenak, R. H. Moser and B. Kilgore Jr.—p. 695.

Use of High Fluid Intake and Low-Sodium Acid-Ash Diet in Management of Portal Cirrhosis with Ascites. J. A. Layne and F. R. Schoen.—p. 705.

Histologic Changes in Livers of Patients with Cirrhosis Treated with Methionine. A. J. Beane and Elizabeth T. Endicott.—p. 710.

Chronic Retention Jaundice in Elderly Patients. J. H. Dible, J. McMichael and Sheila Sherlock. —p. 736.

Tests in Diseases of Liver and Biliary Tract.—Neefe and associates analyzed responses of certain cephalin cholesterol flocculation, thymol turbidity, thymol flocculation and colloidal gold tests in diseases of the liver and biliary tract. The diagnostic value of the individual flocculation test varies with the disease concerned and with the purpose for which the test is used; that is, as an aid in differential diagnosis or as an aid in the detection of hepatic disturbance. For maximum assistance in the study of hepatic and biliary disease, regardless of the purpose for which the tests are used, the routine use of the cephalin cholesterol flocculation, thymol and colloidal gold tests as a group, at least in the initial study of such patients, offers more information than the use of any one or two of these tests. If all three tests cannot be used, the cephalin cholesterol flocculation and thymol reactions are the procedures of choice. None of these tests alone is reliable as a screening test or as a differential diagnostic aid. Further studies of the group response patterns in diseases of the liver and biliary tract are indicated.

Needle Biopsy of Liver.—For three and one-half years needle biopsy of the liver has been carried out at the Cincinnati General Hospital by Kumpe and his associates. One hundred and ninety-five biopsies have been performed on 170 patients. The "Vim"-Silverman needle was used in performing 186 biopsies, and the aspiration technic with the Iversen-Roholm needle in 9. Fourteen biopsies were made using the anterior subcostal approach over an enlarged right lobe and 1 over an enlarged left lobe of the liver. The other 180 biopsies were made by intercostal approach in the anterior or midaxillary line. All biopsies are performed at the bedside. No deaths have occurred in this series which could be attributed directly or indirectly to biopsy. In 11 cases the biopsy material was inadequate for diagnosis. Evaluation of diagnostic accuracy in 19 cases could not be determined because of lack of satisfactory proof of the clinical condition. In 95 cases biopsy diagnosis was in keeping with the clinical and laboratory data. In 41 cases the biopsy diagnosis was verified by necropsy or operation. In 8 cases the biopsy failed to reveal the presence of the hepatic lesion or the complete picture of the hepatic disease subsequently demonstrated at necropsy or operation. In 24 cases the results of biopsy of the liver changed an incorrect clinical diagnosis to a correct one. Since deaths have been reported by other observers following either needle or aspiration biopsy of the liver, caution should be exercised in the selection of cases and in the performance of the biopsy and the patient should be carefully observed following the procedure. The authors believe that final assessment of the safety and value of the procedure must await more widespread experience with it.

Iowa State Medical Society Journal, Des Moines

38:1-40 (Jan.) 1948

Obstetrics Yesterday and Today. R. Lukhart.—p. 1.
Nonspecific Granuloma of Colon. L. T. Palumbo.—p. 6.
Thoracoplasty in Pulmonary Tuberculosis. L. J. Galinsky.—p. 9.
Congenital Gastroenteric Cysts of Thorax: Review and Report of Case. J. H. La Tona and F. C. Coleman.—p. 11.
Allergy in Otolaryngology. O. L. Thorburn.—p. 13.

38:41-76 (Feb.) 1948

Diabetes in Pregnancy. R. A. Reis.—p. 41.
Environmental Care for Children with Rheumatic Fever. R. L. Jackson. —p. 45.
Headaches. W. C. Egloff.—p. 49.
Some Problems of Therapy in Psychosomatic Disease. H. H. Crandall —p. 51.
Management of Squint. A. M. Dean.—p. 54.

Journal of Bacteriology, Baltimore

55:1-138 (Jan.) 1948. Partial Index

Bacteriologic Study of Carbamylmethoxylamine Hemihydrochloride. C. S. Foveos.—p. 1.
Effects of Salts on Streptomycin and Dihydrostreptomycin in Agar Plate Assays. S. F. Quan. —p. 27.
Effect of Aromatic Diamidines on Bacterial Growth. Leah Bichowsky-Slomnitzki.—p. 27.
Note on Detergent Interference in Serial Dilution Assay of Penicillin Using Bacillus Subtilis. R. J. Richey.—p. 43.
*Use of Electron Microscope in Diagnosis of Variola, Vaccinia and Varicella. F. P. O. Nagler and G. Rake.—p. 45.
Physiologic Studies on Spore Germination with Special Reference to Clostridium Botulinum. E. S. Lynne and J. W. Foster.—p. 61.
Enhancement of Penicillin Effectiveness in Vivo by Traces of Cobalt. H. Pratt, J. Dufresne and L. A. Strait.—p. 75
Influence of Varied Protein Intake and of Tryptophane Deficiency on Theiler's Encephalomyelitis of Mice. E. B. Kearney, W. L. Pond, B. A. Plass and others.—p. 89.
Apparent Involvement of Vibrio Fetus in Infection of Man. B. Q. Ward.—p. 113.
Studies on Certain Biologic Characteristics of Malleomyces Mallei and Malleomyces Pseudomallei. W. H. Miller, Lolita Pannell, L. Cravitz and others.—p. 115.

Electron Microscope in Diagnosis of Variola, Vaccinia and Varicella.—During the recent outbreak of smallpox in New York, Nagler and Rake collected specimens for electron microscopy from clinical cases of variola, generalized vaccinia and varicella. In summarizing their observations they stress that elementary bodies of variola and vaccinia that have been recovered from lesions of smallpox and generalized vaccinia in man can be demonstrated with the electron microscope. The latter resemble elementary bodies of vaccinia obtained from vesicular cutaneous lesions in an infected animal. Virus particles of variola and vaccinia recovered from human and animal tissues resemble each other closely in cell structure. They are also indistinguishable from elementary bodies of these viruses derived from the chorioallantois of the chick embryo. Elementary bodies can be demonstrated with the electron microscope in vesicle fluid or crusta from patients with varicella. They are predominately of rectangular shape and uniform in size but are scantier and smaller than bodies of variola and vaccinia. It is suggested that the electron microscope be used in clinical diagnosis of these diseases. If sufficient numbers of bodies can be measured, the electron micrographs might be used in the differential diagnosis between the first two diseases and the last. Bodies in vesicle fluid were scanty and gave an average measurement of 209 by 254 millimicrons. These facts would have suggested that the case was varicella, and, although there was some doubt in the minds of the clinicians whether the case was generalized vaccinia or varicella (since the rash developed six days after vaccination for smallpox), the weight of clinical opinion was strongly in favor of its being varicella.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:1019-1066 (Dec. 27) 1947

*Acute Poliomyelitis with Special Reference to Early Symptomatology and Contact Histories. D. McAlpine, M. Kremer, P. H. Buxton and D. J. Cowan.—p. 1019.

Poliomyelitis: Pre-Paralytic Stage and Effect of Physical Activity on Severity of Paralysis. W. R. Russell.—p. 1023.

Poliomyelitis and Polio-Encephalitis: Case for Review of Terminology. L. H. Murray.—p. 1028.

*Differential Diagnosis of Jaundice by Flocculation Tests. J. B. Rennie and S. L. Rae.—p. 1030.

Paracolon Bacillus Infection Causing Cholecystitis and Suppurative Hepatitis. K. Walton and J. C. Lendham-Green.—p. 1033.

Poliomyelitis: Symptomatology and Contact Histories.—McAlpine and his associates were able to confirm the diagnosis in 54 of 104 cases of poliomyelitis in patients who had been admitted to their clinic for early treatment. Twenty-four of the 54 patients had the nonparalytic form of poliomyelitis. Prodromal symptoms suggesting a systemic infection were present in 70 per cent of all cases. The symptoms were headache, a shivering feeling, malaise, a generalized muscular aching and fever. To these were sometimes added sore throat or coryza, or a gastrointestinal upset such as nausea, vomiting or diarrhea. The duration of this prodromal stage varied from fourteen days to a few hours. Headache was the main symptom of the meningeal stage of the disease. All degrees of stiffness of the neck were encountered. In a routine examination of the nervous system no abnormality may be detected beyond those mentioned. In other cases certain minor signs may be found which clearly indicate invasion of the central nervous system. The commonest of these signs is nystagmus. There were no deaths. Several case histories are given, including an example of a rare ocular complication (opsoclonia) as well as an unusual case of bulbar paralysis successfully treated by tracheotomy. In nearly one third of the proved cases contact histories suggested the probability of an abortive attack of the disease in other members of the family or in friends of the patient. The authors think that the virus of acute poliomyelitis should now be regarded as the usual cause of a benign type of lymphocytic meningitis and of a brainstem encephalitis accompanied by meningitis.

Flocculation Tests in Jaundice.—Rennie and Rae, to determine the value of two flocculation tests in jaundice, made observations on 110 patients with diseases of the liver, of whom 74 showed jaundice; on 100 controls drawn from donors of blood, and on 281 patients who suffered from a variety of conditions but showed no clinical evidence of hepatic disease. Both tests were carried out on the same sample of serum from each of the 491 subjects. In 100 controls both tests were negative. Of 270 patients without clinical evidence of hepatic disease, the cephalin test was positive in 7.8 per cent and the colloidal gold test in 9.6 per cent. Positive results with both tests were obtained in all conditions except diseases of the central nervous system and nephritis, but such results appeared to be most frequent in patients with acute infections (excluding rheumatoid arthritis). In persistent jaundice due to cirrhosis or subacute necrosis positive reactions were the rule and were helpful in differentiating the condition from obstructive jaundice. The gold test would appear to be the more satisfactory of the two procedures, since it is carried out with standard solutions of known chemical constitution.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

54:577-728 (Oct.) 1947

Fetal and Neonatal Mortality. J. P. Greenhill. -p. 577.

Leukorrhea in Pregnancy. W. G. Liston and Fanny B. Chisholm. -p. 592

Causes and Treatment of Tubal Occlusion. L. Smith. -p. 607.

Histaminolytic Index of Blood During Pregnancy and its Clinical Application. G. V. Anrep, G. S. Barsoum and A. Ibrahim. -p. 619.

Manchester Operation for Genital Prolapse. W. F. Shaw.-p. 632.

Unsuspected Tuberculous Endometritis. J. H. O'Brien and H. E. Lawlor. -p. 636.

Icterus in Pregnancy: Clinico-Pathologic Study Including Liver Biopsy. W. C. W. Nixon, L. S. Egeli, V. Laqueur and O. Yahya. -p. 642.

Gestational Changes in Vaginal Epithelium and their Relation to Sex of Fetus. H. E. Hinburgs. -p. 653.

Bilateral Ovarian Dermoids in Girl of Twelve. E. M. Metcalfe. -p. 657.

Note of Case of Cerebral Hemorrhage Occurring Early in Pregnancy. Sylvia Lorer. -p. 659.

Pelvic Contraction due to Idiopathic Steatorrhea. S. F. Haas. -p. 663.

Treatment of Type of Janta-Urethral Vesicovaginal Fistula. G. B. Thomas. -p. 665.

Smellie's Method of Forceps Traction. P. Halpas. -p. 667.

Achalasia of External Os (or Conglutination of External Os). J. A. Waterman. -p. 670.

Acta Chirurgica Scandinavica, Stockholm

96: 199-296 (Dec. 5) 1947. Partial Index

Value of Preoperative Heart Examination: Study Based on Material at Surgical Clinic of Karolinska Sjukhuset, Stockholm, 1940-1944. W. Koch. -p. 199.

Septic Appendical Peritonitis and Fluid Balance. T. Hiertonn. -p. 224.

Obstruction of Duodenum with Special Reference to Gallstone Perforations. J. Hertz. -p. 233

*Vagotomy for Peptic Ulcer: Theoretic Background and Clinical Results. H. B. Wulff. -p. 265.

*Surgical Treatment of Polycystic Kidney. B. Köhler.

Vagotomy for Peptic Ulcer.—Wulff discusses the etiology and pathogenesis of peptic ulcers and the possibility of reducing excessive gastric secretion by bilateral vagotomy. Vagotomy, performed in 22 cases, confirmed results obtained by Dragstedt and other American surgeons. Eight to twelve months have elapsed since his patients were vagotomized, and the desired reduction in gastric secretion has been secured. Objective proof that the ulcer had healed has been obtained, and a distinct symptomatic improvement occurred in each case. The author believes vagotomy to be a promising treatment.

Polycystic Kidney.—Statistics cited by Köhler indicate that the incidence of polycystic disease of the kidney varies between 2 in 1,000 cases to 1 in 3,500 cases. The author believes the disease to be a malformation, often associated with other dysontogenetic changes. Contents of the cysts are formed through filtration into a still active glomerulotubular system. Patients are sometimes admitted to surgical departments because of complications of polycystic kidney, such as pain, fever, hematuria or calculi. The concentration capacity of these kidneys is often maintained and the prognosis may be relatively good. Uremia with advanced polycystic disease of the kidney is characterized by little change in the general condition. Hypertension and retinopathy are not necessarily present. Hypochromic anemia may exist. Palpation of the kidneys is the decisive factor in establishing the diagnosis. Views differ with regard to the advisability of surgical treatment in uncomplicated cases of polycystic kidney. Surgical technic consists in exposing one or both kidneys and opening as many cysts as possible. This can be done by puncture, by excision of the cyst walls or by cauterization. Etching the cyst walls with various corrosives is done to prevent the formation of new cysts. A method of suturing the kidney to the scar in order to make the enlarging cyst accessible for further surgical intervention has also been described. These conservative operative technics were introduced about 1910 and are often referred to as Rovsing's operation. They should be performed in perinephritis and infected cysts, in large hemorrhages, in threatening uremia, in rapid deterioration of renal function and in rapidly increasing hypertension. To illustrate the results and the risks of the operation Köhler reports 3 cases from his own material. One case indicates that the immediate result of operation may be good. The other 2 cases, however, show that the development of the disease is influenced only temporarily.

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Book Notices

Blood Derivatives and Substitutes: Preparation, Storage, Administration and Clinical Results Including a Discussion of Shock Etiology, Physiology, Pathology and Management. By Charles Stanley White, M.D., Sc.D., Chief of Surgery, Doctors Hospital, Washington, D. C., and Jacob Joseph Weinstein, B.S., M.D., Associate in Surgery, School of Medicine, George Washington University, Washington, D. C. Cloth. Price, $7.50. Pp. 484, with 190 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1947.

The use of blood and blood derivatives in medical practice is increasing. The intelligent application of existing knowledge and research into the value of blood substitutes during the war was a great contribution to medical science. Many lives in the armed forces were saved by human plasma and serum albumin. The advances gained by the fractionation of plasma have been documented and presented so that full value can be enjoyed by the civilian population. The authors have brought together in one textbook the pertinent literature necessary for the development and expansion of blood programs throughout the country. It will be interesting and informative for the general practitioner, the surgeon, the internist and the pathologist and will become an outstanding reference and guide for hospital administrators. The chemical and physiologic aspects of blood, plasma and plasma derivatives have been stressed; similarly, their preparation, storage and administration are described in detail. A section is devoted to an important discussion of shock. The text is charified throughout by numerous charts and photographs.

The Oculovetary Muscles. By Richard G. Scobee, B.A., M.D., Instructor in Ophthalmology, Washington University School of Medicine, St. Louis. Cloth. Price, $8. Pp. 330, with 113 illustrations. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1947.

The book, as stated by the authors, is the outgrowth of a series of lectures given to graduate students in the field of ophthalmology. The chapters consist of those usually found in textbooks on ocular musculature with many quotations from well known authorities and copies of illustrations from other texts. Some original illustrations are either enlargements of those found in the writings of others or pictures of methods of patients seen by the author, all of which add little that is new. In the section on surgery of the eye muscles there are no illustrations. The omissions of medical treatment and orthoptic procedures are too numerous to be detailed. In the introduction the author stated: "There will be many who disagree with the ideas to be presented, but the majority who disagree will not have tried them and cannot, therefore, disagree from experience but only from theory." This statement with a perusal of the text is sufficient to show that the author gives little thought to methods which have been in use for twenty-five years or more and also to demonstrate his lack of knowledge of what is transpiring in his chosen field in other parts of the world. References are minute, and a short index is appended. The format is good.

An Atlas of Anatomy. By Regions: Upper Limb, Abdomen, Perineum, Pelvis, Lower Limb, Vertebrae, Vertebral Column, Thorax, Head and Neck. By J. C. Boileau Grant, M.C., M.B., Ch.B., Professor of Anatomy in the University of Toronto, Toronto. Second edition. Cloth. Price $10. Pp. 496, with 591 illustrations. The Williams and Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1947.

The second edition of this already valuable book contains more than two hundred new illustrations, with the addition of color to some of the old illustrations. New features include complete coverage of hernia, the common anomalies found in the dissecting room, illustrations of epiphyses of the limb bones and plates of the cranial nerves. More comparative contrast might have been used in some of the half tone illustrations, but this is not a serious defect. The line drawings seem to lack a sureness of execution, but this is the result of the method used in tracing to insure accuracy. The index is adequate. It is a good atlas.

The Practical Nurse. By Dorothy Deming, R.N. Cloth. Price, $3. Pp. 370. The Commonwealth Fund, 41 E. 57th St., New York 22; Oxford University Press, Amen House, Warwick Square, London, E. C. 4, 1947.

This well written book comes at a time that is most auspicious because of the discussions in speech and writings, much of which are unsound, of the nursing problem. It separates clearly the duties of the practical nurse as distinguished from the professional nurse, ward maids and orderlies. This is important because many persons discussing this subject today are apparently not familiar with the specific duties of any of these categories. The advantages, disadvantages and dangers are treated fairly and without favoritism or prejudice and are treated completely in the abstract. The book deals with the length of time required for training; the subjects to be covered; the uniform; the acceptance by hospital administrators and professional nurses. It describes the practical nurse; the duties; the future supply. The volume outlines the place of the practical nurse in the home, large hospital, small hospital, psychiatric hospital, industrial nursing, federal services and public health nursing. It stresses the importance of supervision by the hospital authorities and professional nurses. The book is well documented. The chapter references are sound and illuminating and cover the situation thoroughly. The construction of the chapters, covering various situations of nursing, is orderly. Altogether it is a splendid book and should find a proper place in the hands and on the bookshelves of all interested in this most important subject.

The Thematic Apperception Test: The Theory and Technique of Interpretation. By Silvan S. Tomkins, Ph.D. With the Collaboration of Elizabeth J. Tomkins, B.A. Paperbound. Price, $3. Pp. 297. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1947.

The present volume represents a clear, concise, well written description of the method, aims, technic and conclusions drawn from the thematic apperception test. Although some work in this field was carried out by Francis Galton on himself as early as 1879, nothing of value was published until 1935 by Morgan and Murray. This book represents a further study and elaboration of the work of Morgan and Murray and as such has been extended, amplified and refined. Along with the Rorschach test, the thematic apperception test has proved of definite value in the diagnosis of personality. There is an excellent bibliography and an adequate index. The book is recommended to all those who are interested in personality study, particularly to psychologists and sociologists, who could well use this volume as a textbook for study and teaching.

Sistema nervovegetativo. Por Augusto Pi Suner, director del Instituto de medicina experimental de Caracas, Caracas. Fabrikoid. Pp. 817, with 173 illustrations. Union Tipografica editorial Hispano-Americana, Calzada de la Piedad núm. 220-P, México, D.F., 1947.

This work is one of the best examples of Latin-American typography that has come to view. The illustrations are excellent, the type attractive. The general make-up of the book commends favorable attention. The author, whose father was a famous medical teacher of Barcelona, has made a notable contribution to Spanish medical literature. One is impressed that the book is scientifically up-to-date, authoritative and complete. Like many French and Spanish publications the references, though numerous, are by name and year only, without statement of the source. More than two thousand authors are referred to in the text. Readers of Spanish will find the text clearly and attractively written.

Fisiopatologia della circolazione venosa. Di Luigi Condorelli. Collana di scienze mediche 2. Boards. Price, 1200 lire. Pp. 337, with 83 illustrations. Casa editrice A. P. E. (Aplenda poligrafica editoriale) degli Editori U. & G. Pagnano, Corso Italia, 23, Catania, 1947.

This monographic study is on venous circulation which has been the subject of previous publications by the author and his pupils. After describing a new apparatus for continuous recording of the venous pressure in man, the author applies the results of the method to the interpretation of many circulatory conditions. New conceptions are advanced. Some of these conceptions, such as those concerning a venous hypertonus (so-called active venous hypertension) are attractive, but few appear to be substantiated by solid evidence. Bibliographic quotations are mostly limited to French and German papers of the last ten years. The style and the composition of the book are far from being clear.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TETANUS TOXOID

To the Editor:—In recent years I have inclined to the practice of giving patients with minor injuries an injection of tetanus toxoid instead of giving tetanus antitoxin. Recently I have used fluid toxoid exclusively, hoping to speed up the early development of immunity. Is there a record of cases of tetanus having occurred after such administration because of immunity not having had time to develop? Is this danger materially greater than the danger of a serious reaction to the horse serum of tetanus antitoxin assuming that the serum is withheld from patients known to be serum sensitive? I refer to the risk incurred from routine use of the 1,500 unit package of tetanus antitoxin. Would administration of penicillin, say daily injections of 300,000 units in oil and wax for the first three to four days, delay the growth of tetanus bacilli sufficiently to enable the body to respond to tetanus toxoid injected immediately after the injury? Eventually I believe the entire population should be given tetanus immunization as part of the infancy series and that thereafter a dose of the toxoid will be an accepted procedure when an injury brings the patient to the physician.

Henry L. Skinner, M.D., Battle Ground, Wash.

ANSWER.—If a person has been actively immunized with tetanus toxoid, protection from tetanus may be expected to endure for about two years. Thereafter immunity may be maintained by injection of a small dose of tetanus toxoid annually. Under the foregoing circumstances, if an injury occurred and the possibility of tetanus infection was feared, an immediate injection of tetanus toxoid instead of tetanus antitoxin would be indicated. However, if the patient had not been actively immunized, a single injection of tetanus toxoid would not be regarded as a reliable preventive. Therefore it would be proper to inject tetanus antitoxin. There is no reason why tetanus could not occur following a single injection of tetanus toxoid, because there would not be sufficient time for the required amount of antibodies to develop before the disease was well established. It has been reported that a stimulating, or booster, dose of tetanus toxoid will result in greater production of antibodies within a given time than can be supplied by passive immunization with 1,500 units of tetanus antitoxin. If it is known that a patient is sensitive to horse serum and it is considered that tetanus antitoxin should be administered, bovine tetanus antitoxin should be used; in any event, before injecting tetanus antitoxin a sensitivity test should be made.

If daily doses of penicillin are administered immediately after an injury, the growth of tetanus bacilli may be retarded. Consequently, by the administration of tetanus toxoid to a patient, the chances of protection may be improved, for a reservoir of antibodies is being established as a result of the immunizing agent. It is now an established practice with some pediatricians to administer tetanus toxoid either alone or in combination with other immunization agents to all infants or children and to inject a small booster dose of tetanus toxoid every year or two.

VARICOSE ULCERS

To the Editor:—What is the treatment of ulcerations of the leg occurring in patients who have had a bilateral ligation of the common femoral vein for pulmonary embolism? Ulcerations occurred about one year following ligation. Dependent edema is present, without visible varicosities. The ulcers occurred spontaneously, are perfectly round (punched out) and very superficial. They have not responded to the usual method for treatment of "varicose ulcers." One patient has a hyperhidrosis of the affected limb. Is sympathectomy indicated to release spastic influences? The Wassermann test is negative.

M.D., New York.

ANSWER.—Post-thrombotic indurations followed by ulceration do occur after ligations of the femoral veins, especially if the common femoral vein has been tied. Short periods of rest in bed with elevation of the limb, followed by application of glycerin-gelatin casts, often help but recurrences are frequent. Excision of the ulcer with its collar of induration is the next procedure, the defect being covered with a split thickness skin graft. The edema must be controlled with well fitting elastic hose or rubber bandage. If there is evidence of increased sympathetic activity in the affected limb, as manifested by hyperhidrosis or diminished pulsation and temperature, a lumbar sympathectomy is beneficial. No matter what procedure is used, continuous elastic support is important and may have to be worn for many years.

SPLINTER HEMORRHAGES

To the Editor:—A colleague (aged 35) has noted splinter hemorrhages of all his finger nails almost continuously for seven or eight years without other untoward symptoms. Except for roentgen examination of the chest, red blood cell count, white blood cell count, differential count and sedimentation rate, all within normal limits, he has not had laboratory tests. Familial hemorrhagic history, drug addiction and rheumatic history are absent. Physical examination, which he performed, disclosed two to three nontender lymph nodes 1 cm. in diameter in each epitrochlear region.

What are the possibilities in this case? Have cases of so-called "benign" splinter hemorrhages been reported?

M.D., California.

ANSWER.—The nature of the hemorrhages in the nail beds is not clear. In the absence of hemorrhages elsewhere in the skin, mucous membrane or toe nails, the possibility of trauma or local irritation rather than a systemic disease must be considered. No known cases of "benign splinter hemorrhages" are reported in the available literature. Additional tests of interest would be the platelet number, degree of capillary fragility, bleeding, clotting and prothrombin times and evidences of sensitivity (allergy).

RECALCITRANT PUSTULAR ERUPTIONS

To the Editor:—A white woman aged 46 has had an eruption on both feet since 1940. The eruption appears in crops of small-sized pinhead papules, which crust almost immediately after forming and in some cases enlarge to form flat pustules about the size of a matchhead. The lesions are mostly present on the plantar surface of the foot extending up on the lateral aspects and cause intense itching. Lesions between the toes are absent. This patient has been to every dermatologist in this vicinity and has received permanganate soaks, ultraviolet and roentgen therapy, phenol and glycerin, ointment of benzoic and salicylic acid and numerous other forms of treatment. She is now using "sopronol" (sodium propionate) powder and ointment and is having her feet painted twice weekly with "fluid salicresin" (a fungicidal preparation containing salicylic acid 2 per cent, benzoic acid 2 per cent, secondary amyltricresols 0.1 per cent, orthohydroxyphenylmercuric chloride 0.1 per cent and isopropyl alcohol 60 per cent, Upjohn). She had a four day course of penicillin and has been using "benadryl" for about three weeks without amelioration of symptoms. Opening the pustules has not prevented new ones from forming. The feet start to clear up temporarily, but then suddenly relapse with renewed pruritus. What is the diagnosis and treatment?

M.D., Kansas.

ANSWER.—Consideration of the location, the chronicity and the pustular element of the dermatosis indicate that it belongs in the category of what is called recalcitrant pustular eruptions of the hands and feet. The several diseases included in this term are acrodermatitis continua (Hallopeau), pustular psoriasis of the extremities and pustular bacterid described by Andrews. These diseases have common characteristics and have not been definitely established as separate entities.

Features of these diseases are their location on the hands and feet, unilateral or bilateral, a rather sharply marginated patch with some degree of inflammation and closely adherent, dry scales. A predominant feature is pustulation, the pustules are rather deep seated, at first the size of pinheads but later larger. These diseases usually occur in adults; itching may be present. They are further characterized by their chronicity, exacerbations and resistance to treatment.

Acrodermatitis continua, also called acrodermatitis perstans and dermatitis repens, is more likely to appear on the extremity of a digit and coexist with paronychia. Staphylococcus aureus may be recovered from the pustule. Pustular psoriasis and pustular bacterid are more likely to occur on the palms or soles. The pustules as a rule are sterile.

In treatment search for and removal of foci of infection are important. The application of penicillin ointment locally is of value. Response has been reported following administration of sulfadiazine and also sulfapyridine. Measures to improve the patient's general health are indicated. The local use of diluted aluminum acetate (1:20) in the form of a wet dressing or in ointment base and daily painting with 10 per cent solution of potassium permanganate are recommended.

GENTIAN VIOLET IN PREGNANCY

To the Editor:—A woman, aged 27, three months pregnant, was treated with gentian violet for Oxyuris vermicularis. After taking two ½ grain (30 mg.) tablets three times a day for six days a spontaneous abortion occurred. Is there a connection between the medication and the abortion?

Walter Freund, M.D., Oswego, N. Y.

ANSWER.—Gentian violet medicinal taken internally in large doses has a definitely toxic effect. Amounts about eight times that given to this patient were necessary to kill experimental dogs. The dosage given this patient was well within therapeutic limits.

Whether the gentian violet taken by this patient could have had any effect in producing the abortion must remain entirely speculative. Probably the abortion was entirely coincidental and not the result of the medication.

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